



MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1.3.2 courses that include experiential learning through project work/field work/internship during 2022-23

S.No	Title of IV year Project	Subject code & Subjects name Related to the Projects
1	AUTOMATIC DROWSINESS DETECTION AND ALERT SYSTEM USING TRANSFER LEARNING	CS8691 Artificial Intelligence
2	BRAIN STROKE ANALYSIS	CS8075 Data Warehousing and Data Mining
3	PROXY RE-ENCRYPTION FOR SECURE MEDICAL DATA SHARING IN CLOUDS	CS8791 Cloud Computing,
4	IMPLEMENTATION OF BLOCK CHAIN USING FARMER'S PORTAL	CS8792 Cryptography and Network Security
5	REAL TIME DEEP LEARNING BASED TECHNIQUES FOR DETECTING POTHOLES	CS8691 Artificial Intelligence
6	HOUSE PRICE PREDICTION MODEL	CS8691 Artificial Intelligence
7	DATA ANALYSIS FOR VISUALIZATION OF CRIME DATA	CS8091 Big Data Analytics
8	REMOTE HEART - RATE MONITOR AND MEDICAL SUPPORT USING IOT	EC8691 MicroProcessors and MicroControllers CS8691 Artificial Intelligence
9	RASH DRIVING PREDICTION USING MACHINE LEARNING AND DEEP LEARNING	CS8082 Machine Learning Techniques
10	YUKI - THE HUMAN COMPANION ROBOT	CS8079 Human Computer Interaction
11	FRUIT QUALITY DETECTION USING MACHINE LEARNING TECHNIQUES	CS8082 Machine Learning Techniques CS8651 Internet Programming
12	IOT BASED TRAFFIC CONGESTION MONITORING AND THEFT ALARM	EC8691 Microprocessors and Controllers
13	SCOUTING AND RECRUITING ATHLETES BASED ON PERFORMANCE ANALYSIS	CS8075 Data Warehousing and Data Mining
14	REAL TIME SIGN LANGUAGE INTERPRETATION	CS8691 Artificial Intelligence
15	D M CRUISER FOR LINKEDIN	CS8651 Internet Programming
16	HELMET DETECTION	CS8691 Artificial Intelligence
17	AGRICULTURE CROP RECOMMENDATION BASED ON PRODUCTIVITY	CS8691 Artificial Intelligence
18	SECURE HEALTH RECORD SHARING WITH BLOCK CHAIN	CS8081 Internet of Things
19	HEART STROKE CARDIOVASCULAR DIAGNOSIS AND PREDICTIVE SYSTEM USING MULTI MODEL SUPERVISED TECHNIQUE	CS8691 Artificial Intelligence

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HOD/CSE

Head of the Department
DEPARTMENT OF CSE

Mohamed Sathak A.J. College of Engineering
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- Analyze applications of IoT in real time scenario

TEXTBOOK:

1. David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Rob Barton and Jerome Henry, "IoT Fundamentals: Networking Technologies, Protocols and Use Cases for Internet of Things, Cisco Press, 2017

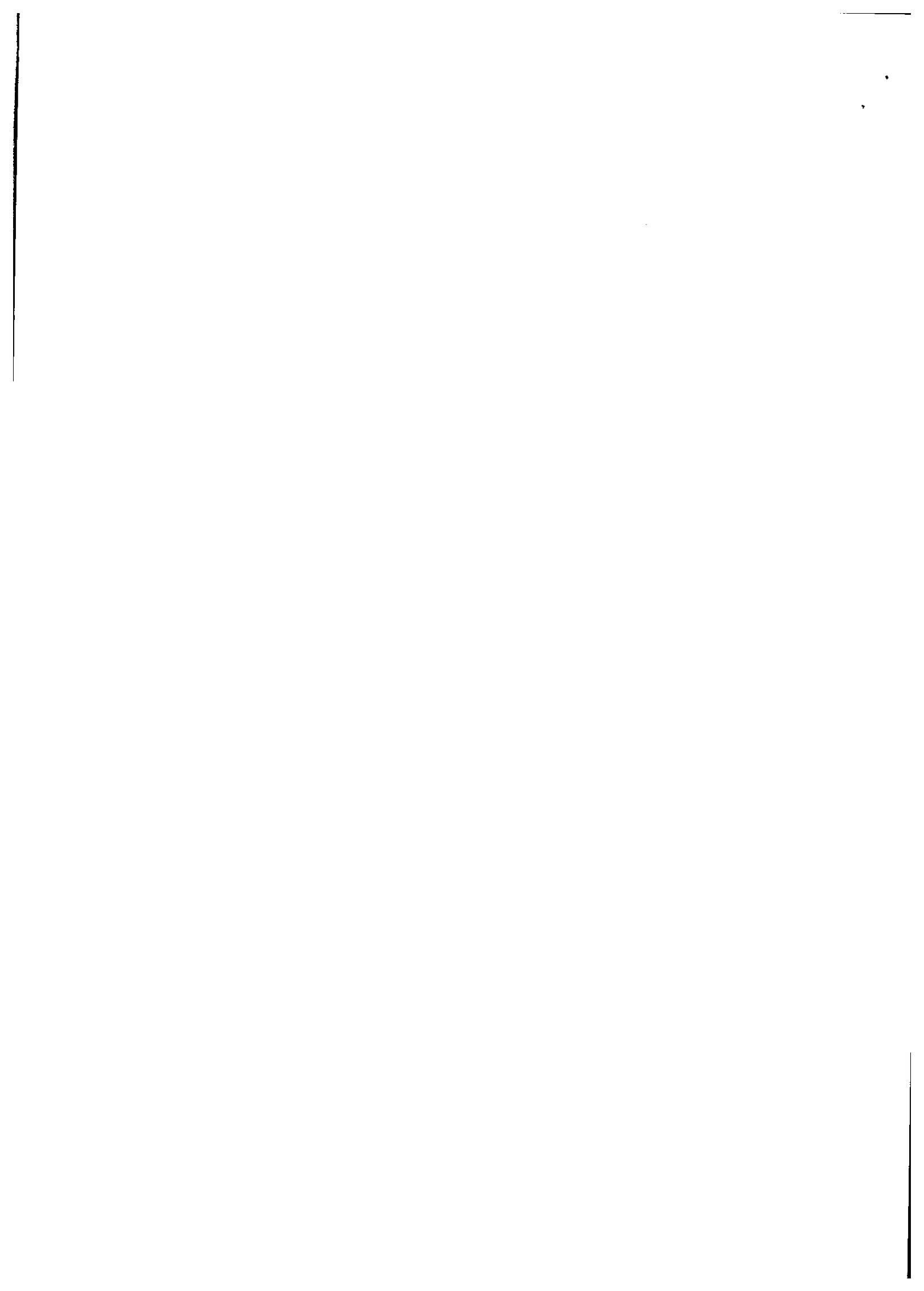
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REFERENCES:

1. Arshdeep Bahga, Vijay Madiseti, "Internet of Things – A hands-on approach", Universities Press, 2015
2. Olivier Hersent, David Boswarthick, Omar Elloumi , "The Internet of Things – Key applications and Protocols", Wiley, 2012 (for Unit 2).
3. Jan Ho" ller, Vlasios Tsiatsis , Catherine Mulligan, Stamatis , Karnouskos, Stefan Avesand. David Boyle, "From Machine-to-Machine to the Internet of Things - Introduction to a New Age of Intelligence", Elsevier, 2014.
4. Dieter Uckelmann, Mark Harrison, Michahelles, Florian (Eds), "Architecting the Internet of Things", Springer, 2011.
5. Michael Margolis, Arduino Cookbook, Recipes to Begin, Expand, and Enhance Your Projects, 2nd Edition, O'Reilly Media, 2011.
<https://www.arduino.cc/>
https://www.ibm.com/smarterplanet/us/en/?ca=v_smarterplanet



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- Analyze applications of IoT in real time scenario

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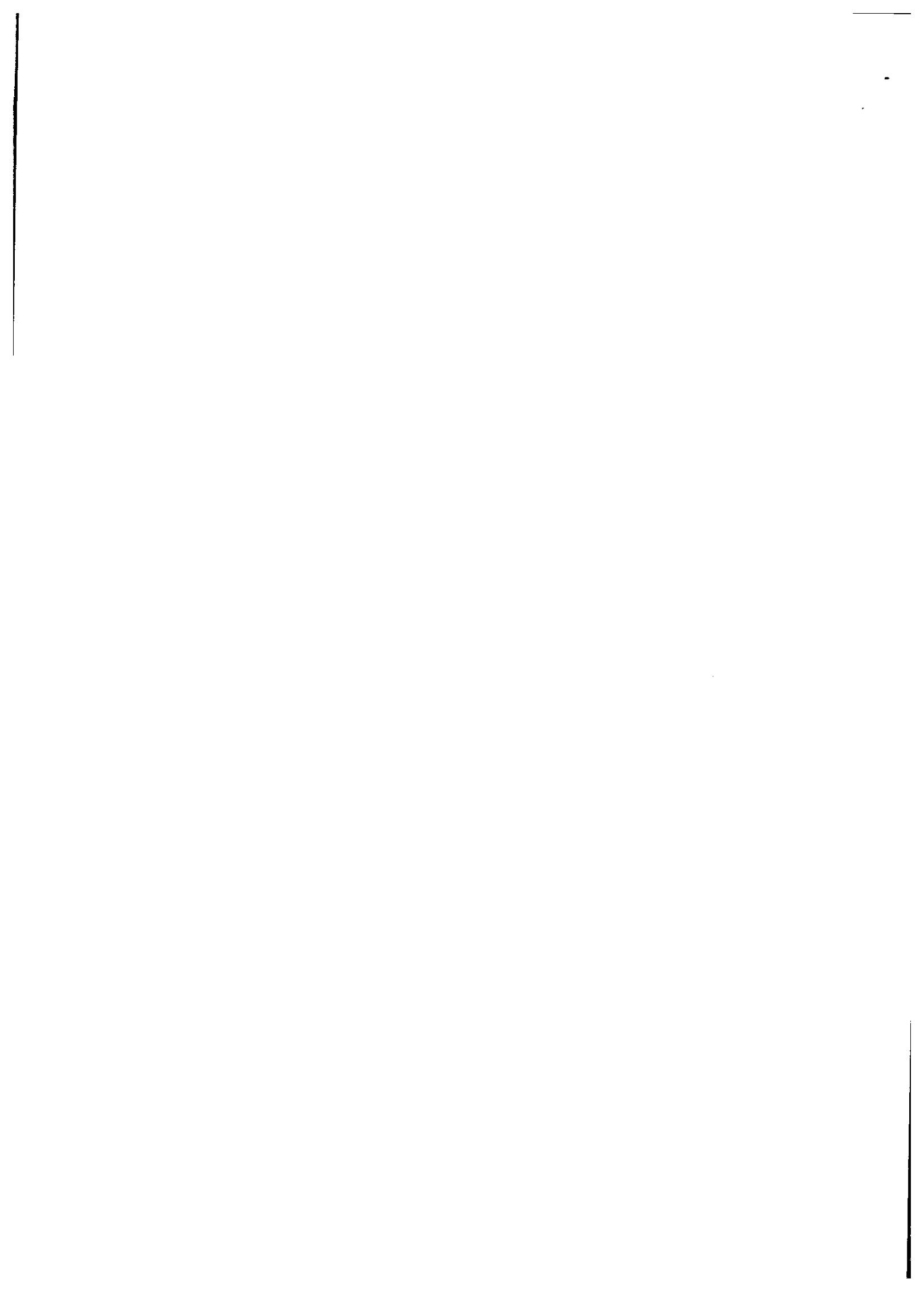
REFERENCES:

1. Arshdeep Bahga, Vijay Madiseti, "Internet of Things – A hands-on approach", Universities Press, 2015
2. Olivier Hersent, David Boswarthick, Omar Elloumi , "The Internet of Things – Key applications and Protocols", Wiley, 2012 (for Unit 2).
3. Jan Ho" ller, Vlasios Tsiatsis , Catherine Mulligan, Stamatis , Karnouskos, Stefan Avesand. David Boyle, "From Machine-to-Machine to the Internet of Things - Introduction to a New Age of Intelligence", Elsevier, 2014.
4. Dieter Uckelmann, Mark Harrison, Michahelles, Florian (Eds), "Architecting the Internet of Things", Springer, 2011.
5. Michael Margolis, Arduino Cookbook, Recipes to Begin, Expand, and Enhance Your Projects, 2nd Edition, O'Reilly Media, 2011.
<https://www.arduino.cc/>
https://www.ibm.com/smarterplanet/us/en/?ca=v_smarterplanet



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SCOUTING AND RECRUITING ATHLETE BASED ON PERFORMANCE ANALYSIS

A PROJECT REPORT

Submitted by

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Navaneethan P (311819104030),
Prakash T (311819104034)*

*in partial fulfillment for the award of the degree
of*

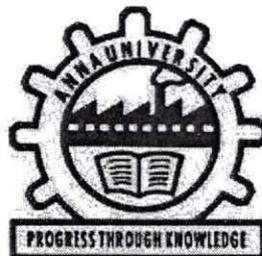
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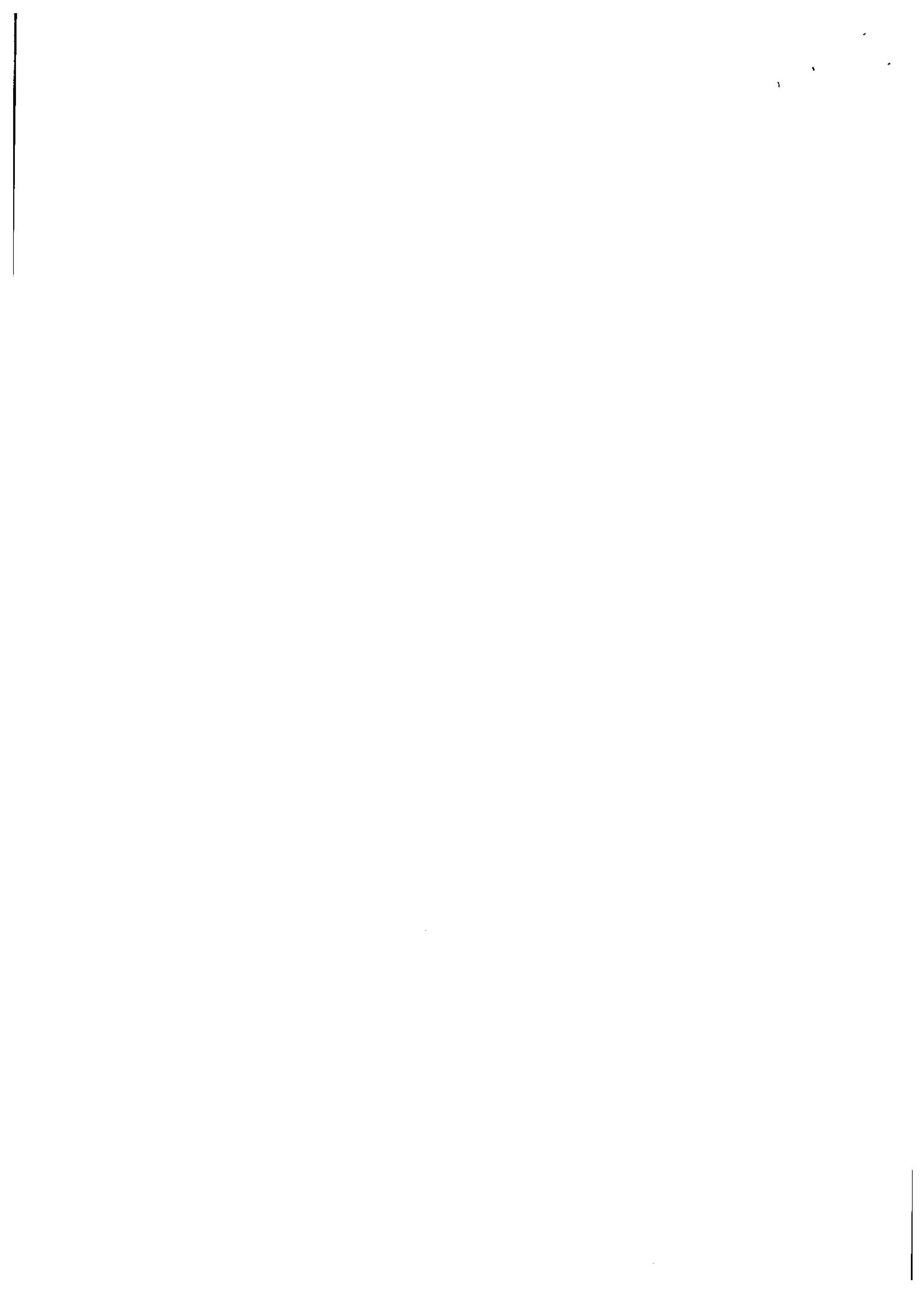


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BONAFIDE CERTIFICATE

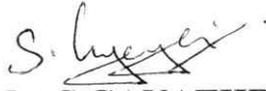
Certified that this project report "SCOUTING AND RECRUITING ATHLETES BASED ON PERFORMANCE ANALYSIS" is the bonafide work of "ROHITH E S (311819104037) , NAVANEETHAN P (311819104030), PRAKASH T (311819104034)" who carried out the project under my supervision.



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Project Viva-Voice held on 18/05/2023



INTERNAL EXAMINER



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18/5/23

EXTERNAL EXAMINER

ABSTRACT

The project is a web-based platform that connects athletes and clubs with the goal of facilitating the recruitment process. Athletes are able to create profiles on the platforms and upload their achievements, including their athletic performance statistics, accomplishments, and any other relevant information. Scouts are also able to create profiles on the platform and are able to search through the athlete profiles and find potential recruits that fit their criteria.

The platform is built using Flask, a python web framework, and MongoDB, a No-SQL database. The Flask framework provides a robust set of tools for building web applications, while MongoDB allows for flexible and scalable data storage. The platform also includes authentication and authorization features to ensure the security of user data.

Overall, the project aims to streamline the recruitment process for both athletes and scouts, making it easier for talented athletes to be discovered and recruited by professional teams or organisations.



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CHAPTER 7

CONCLUSION AND FUTURE WORK

7.1 CONCLUSION:

In conclusion, this project aims to provide a platform for clubs to scout players and collect and analyse their performance data using data analytics techniques. By allowing players to create profiles and input their performance metrics, clubs can easily access this information and make data-driven decisions when recruiting new players. This not only saves time and resources for clubs but also provides a fair opportunity for players to showcase their skills and be evaluated objectively. Overall, the project can help enhance the recruitment process in sports and contribute to the development of a data-driven approach to talent identification and management.

7.2 FUTURE WORK:

Currently this app only supports football and cricket, In the future more sports will be added. Notifications will be added so that the athletes will be notified whenever the clubs try to recruit them.



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12/19/2012

DATA WAREHOUSING AND DATA MINING

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OBJECTIVES:

- To understand data warehouse concepts, architecture, business analysis and tools
- To understand data pre-processing and data visualization techniques
- To study algorithms for finding hidden and interesting patterns in data
- To understand and apply various classification and clustering techniques using tools.

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UNIT I DATA WAREHOUSING, BUSINESS ANALYSIS AND ON-LINE

ANALYTICAL

PROCESSING (OLAP) 9

Basic Concepts - Data Warehousing Components – Building a Data Warehouse – Database Architectures for Parallel Processing – Parallel DBMS Vendors - Multidimensional Data Model –

Data Warehouse Schemas for Decision Support, Concept Hierarchies -Characteristics of OLAP

Systems – Typical OLAP Operations, OLAP and OLTP.

UNIT II DATA MINING – INTRODUCTION 9

Introduction to Data Mining Systems – Knowledge Discovery Process – Data Mining Techniques

– Issues – applications- Data Objects and attribute types, Statistical description of data, Data Preprocessing – Cleaning, Integration, Reduction, Transformation and discretization, Data Visualization, Data similarity and dissimilarity measures.

UNIT III DATA MINING - FREQUENT PATTERN ANALYSIS 9

Mining Frequent Patterns, Associations and Correlations – Mining Methods- Pattern Evaluation

Method – Pattern Mining in Multilevel, Multi Dimensional Space – Constraint Based Frequent

Pattern Mining, Classification using Frequent Patterns

UNIT IV CLASSIFICATION AND CLUSTERING 9

Decision Tree Induction - Bayesian Classification – Rule Based Classification – Classification by

Back Propagation – Support Vector Machines — Lazy Learners – Model Evaluation and Selection-Techniques to improve Classification Accuracy.

Clustering Techniques – Cluster analysis-Partitioning Methods - Hierarchical Methods

Density

Based Methods - Grid Based Methods – Evaluation of clustering – Clustering high dimensional

data- Clustering with constraints, Outlier analysis-outlier detection methods.

UNIT V WEKA TOOL 9

Datasets – Introduction, Iris plants database, Breast cancer database, Auto imports database -

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Introduction to WEKA, The Explorer – Getting started, Exploring the explorer, Learning algorithms,
Clustering algorithms, Association–rule learners.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, the students should be able to:

- Design a Data warehouse system and perform business analysis with OLAP tools.
- Apply suitable pre-processing and visualization techniques for data analysis
- Apply frequent pattern and association rule mining techniques for data analysis
- Apply appropriate classification and clustering techniques for data analysis

TEXT BOOK:

1. Jiawei Han and Micheline Kamber, “Data Mining Concepts and Techniques”, Third Edition,
Elsevier, 2012.

REFERENCES:

1. Alex Berson and Stephen J.Smith, “Data Warehousing, Data Mining & OLAP”, Tata McGraw – Hill Edition, 35th Reprint 2016.
2. K.P. Soman, Shyam Diwakar and V. Ajay, “Insight into Data Mining Theory and Practice”,
Eastern Economy Edition, Prentice Hall of India, 2006.
3. Ian H.Witten and Eibe Frank, “Data Mining: Practical Machine Learning Tools and Techniques”, Elsevier, Second Edition.



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Realtime Sign Language Interpretation

A PROJECT REPORT

Submitted by

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A. Suhail Basha (311819104045)
V. Vanchinathan (311819104050)

*in partial fulfillment for the award of the degree
of*

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Certified that this Final year project report “REALTIME SIGN LANGUAGE INTERPRETATION” is the Bonafide work of M. HYDER ALI (311819104017) , A. SUHAIL BASHA (311819104045), V. VANCHINATHAN (311819104050), who carried out the project work under my supervision.



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Mini Project Viva-Voice held on 18/05/2023



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EXTERNAL EXAMINER

ABSTRACT

The main objective of the Project on Real-time sign language interpretation is to leverage the Zoom API token to capture webcam input and interpret sign language gestures into English words using machine learning algorithms. Media Pipe, a powerful framework developed by Google, is employed for accurate hand gesture detection and tracking in real-time. The interpreted sign language is displayed as captions or subtitles, making it accessible to non-sign language users. This report presents the methodology, implementation, and evaluation of our real-time sign language interpretation system, along with the challenges faced during development and potential applications for improving communication accessibility.

The aim of the Real-time Sign Language Interpretation project is to develop a system that utilizes the Zoom API token to capture webcam input and interpret sign language gestures into English words using machine learning algorithms. The project leverages the capabilities of MediaPipe, a robust framework created by Google, for accurate hand gesture detection and tracking in real-time. The interpreted sign language is then displayed as captions or subtitles, allowing non-sign language users to understand the conversation. This report provides a comprehensive overview of the methodology, implementation, and evaluation of our real-time sign language interpretation system. Additionally, it discusses the challenges encountered during the development process and explores potential applications for enhancing communication accessibility. By combining the power of machine learning, MediaPipe, and the Zoom API, our system offers a practical solution for bridging the communication gap between sign language users and non-sign language users in various contexts.



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10. CONCLUSION

In conclusion, our project focused on the development of a real-time sign language interpretation system using machine learning and MediaPipe technology. The objective was to bridge the communication gap between individuals who use sign language and those who rely on spoken language.

Throughout the project, we successfully implemented a robust system that can capture sign language gestures through the webcam using the Zoom API, interpret them in real time, and provide English word captions. Our model leveraged the power of LSTM neural networks and MediaPipe's hand-tracking capabilities to accurately recognize and track hand gestures, enabling efficient and reliable interpretation. The project addressed several challenges, including data collection, preprocessing, model development, and system integration. We collected a diverse dataset of sign language gestures, implemented data preprocessing techniques to enhance model performance, and developed an LSTM-based neural network architecture. The model was trained, evaluated, and optimized to achieve high accuracy and real-time performance. It has the potential to revolutionize the way sign language users communicate in various settings, including online meetings, educational institutions, and public spaces.

As with any project, there are areas for future enhancement. Further refinement of the model, exploration of additional sign gestures, and integration with other communication platforms can extend the capabilities and reach of the system.

In conclusion, the real-time sign language interpretation project showcases the potential of machine learning and MediaPipe technology in enabling seamless communication between sign language and spoken language users. It contributes to the advancement of assistive technologies and promotes inclusivity in our society.



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OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION 9

Introduction–Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents–

Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

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UNIT II PROBLEM SOLVING METHODS 9

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search

Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal

Decisions in Games – Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGE REPRESENTATION 9

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining- Backward

Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and

Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWARE AGENTS 9

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS 9

AI applications – Language Models – Information Retrieval- Information Extraction – Natural

Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving

TOTAL :45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

TEXT BOOKS:

1 S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2009.

2 I. Bratko, "Prolog: Programming for Artificial Intelligence", Fourth edition, Addison-Wesley

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Educational Publishers Inc., 2011.

REFERENCES:

1. M. Tim Jones, "Artificial Intelligence: A Systems Approach(Computer Science)", Jones and Bartlett Publishers, Inc.; First Edition, 2008.
2. Nils J. Nilsson, "The Quest for Artificial Intelligence", Cambridge University Press, 2009.
3. William F. Clocksin and Christopher S. Mellish," Programming in Prolog: Using the ISO Standard", Fifth Edition, Springer, 2003.
4. Gerhard Weiss, "Multi Agent Systems", Second Edition, MIT Press, 2013.
5. David L. Poole and Alan K. Mackworth, "Artificial Intelligence: Foundations of Computational Agents", Cambridge University Press, 2010.



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DM Cruiser - A LinkedIn Chrome Extension

A PROJECT REPORT

Submitted by

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Certified that this project report titled “DM Cruiser - A LinkedIn Chrome Extension” is the bonafide work of “ATIF AHMAD ANSARI (311819104007), FAUWAAZ ASHAL (311819104011) and HAMZA ADHNAN SHAKIR (311819104013)” who carried out the project work under my supervision.



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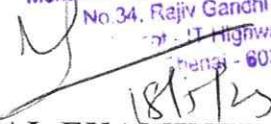


Submitted for the project viva voice on 18-05-2023



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EXTERNAL EXAMINER

ABSTRACT

Connecting with potential clients is crucial for business growth, but it can be costly and time-consuming. Traditional methods like cold calling and direct mail campaigns may produce limited results, while many potential clients may be hesitant to engage.

While LinkedIn is a useful platform to connect with potential clients and customers, the manual process of finding and contacting them can be time-consuming and tedious. This can cause a strain on the productivity of businesses and professionals, as they may not have the time to focus on client nurturing.

With this innovative software solution, companies can save valuable time and resources that would otherwise be spent on manual lead sourcing. The software's advanced algorithms and data-driven approach ensure that businesses are always targeting the right leads at the right time, increasing the likelihood of successful conversions.

One of the key advantages of this software solution is its ability to automate repetitive tasks and standardize workflows. The software can send out personalized messages and even prioritize leads based on their level of engagement. This allows sales teams to focus on more high-level tasks, such as building relationships with clients and closing deals, ultimately driving revenue growth for the organization.

Overall, this innovative software solution is a game-changer for companies looking to maximize their demand & lead generation efforts and increase their potential. By leveraging advanced automation, the software solution offers a more efficient, effective, and streamlined approach to lead generation, helping businesses stay ahead of the competition in today's fast-paced business environment.

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7. Conclusion

In conclusion, our project involved the design, development, and testing of a Chrome extension that helps users automate the lead generation and communication processes on LinkedIn. Through the use of HTML, CSS, and various scripting languages, we were able to create a functional and user-friendly extension that meets the needs of our stakeholders.

Our extension provides users with the ability to scrape and collect contact information from LinkedIn profiles, automate the sending of connection requests and follow-up messages, and manage their contacts in an efficient manner. By automating these processes, we have helped our users save valuable time and effort, allowing them to focus on other aspects of their business.

In addition to the core functionality of the extension, we have also focused on creating a pleasant user experience. Our UI/UX design incorporates intuitive navigation and clear, concise language to help users understand and make use of the features provided by the extension.

Looking ahead, we have identified several opportunities for future improvements to the extension, including the ability to follow up with contacts via automated messages, and the ability to scrape email addresses and automate email communication. We will continue to work towards making our extension even more effective and user-friendly, based on feedback from our stakeholders.

Overall, we believe that our project has provided a valuable tool for businesses and individuals looking to streamline their LinkedIn lead generation and communication processes. We hope that our extension will continue to serve our users well into the future.



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OBJECTIVES:

- To understand different Internet Technologies.
- To learn java-specific web services architecture

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0 9

Web Essentials: Clients, Servers and Communication – The Internet – Basic Internet protocols – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Semantic elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations.

UNIT II CLIENT SIDE PROGRAMMING 9

Java Script: An introduction to JavaScript–JavaScript DOM Model-Date and Objects,- Regular Expressions- Exception Handling-Validation-Built-in objects-Event Handling-DHTML with JavaScript- JSON introduction – Syntax – Function Files – Http Request – SQL.

UNIT III SERVER SIDE PROGRAMMING 9

Servlets: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions- Session Handling- Understanding Cookies- Installing and Configuring Apache Tomcat Web Server- DATABASE CONNECTIVITY: JDBC perspectives, JDBC program example - JSP: Understanding Java Server Pages-JSP Standard Tag Library (JSTL)-Creating HTML forms by embedding JSP code.

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UNIT IV PHP and XML 9

An introduction to PHP: PHP- Using PHP- Variables- Program control- Built-in functions- Form Validation- Regular Expressions - File handling – Cookies - Connecting to Database. XML: Basic XML- Document Type Definition- XML Schema DOM and Presenting XML, XML Parsers and Validation, XSL and XSLT Transformation, News Feed (RSS and ATOM).

UNIT V INTRODUCTION TO AJAX and WEB SERVICES 9

AJAX: Ajax Client Server Architecture-XML Http Request Object-Call Back Methods; Web Services: Introduction- Java web services Basics – Creating, Publishing, Testing and Describing a Web services (WSDL)-Consuming a web service, Database Driven web service from an application –SOAP.

TOTAL 45 PERIODS**OUTCOMES:**

At the end of the course, the students should be able to:

- Construct a basic website using HTML and Cascading Style Sheets.
- Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
- Develop server side programs using Servlets and JSP.
- Construct simple web pages in PHP and to represent data in XML format.
- Use AJAX and web services to develop interactive web applications

TEXT BOOK:

1. Deitel and Deitel and Nieto, “Internet and World Wide Web - How to Program”, Prentice Hall, 5th Edition, 2011.

REFERENCES:

1. Stephen Wynkoop and John Burke “Running a Perfect Website”, QUE, 2nd Edition, 1999.
2. Chris Bates, Web Programming – Building Intranet Applications, 3rd Edition, Wiley Publications, 2009.
3. Jeffrey C and Jackson, “Web Technologies A Computer Science Perspective”, Pearson Education, 2011.
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5. UttamK.Roy, “Web Technologies”, Oxford University Press, 2011.


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Helmet Detection Using Machine Learning

A PROJECT REPORT

Submitted by

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A. Syed Suheab (311819104047)

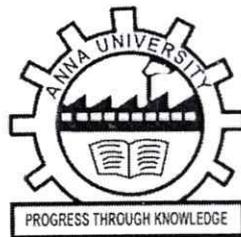
in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING



MOHAMED SATHAK A J COLLEGE OF ENGINEERING

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BONAFIDE CERTIFICATE

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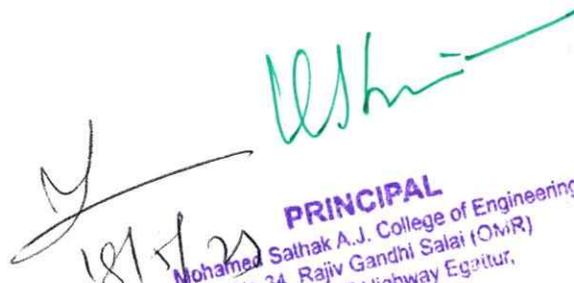
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Mini Project Viva-Voice held on 18/05/2023



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18/5/23

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EXTERNAL EXAMINER

ABSTRACT

Nowadays road accidents are a very major issue for human death. Among road accidents, bike accidents are the biggest problem in our country. Every year, the number of deaths is increasing from the previous year. Bike accidents cause serious injuries to people because off-bikers do not use helmets. One of a motorcyclist's essential protective devices is a helmet. After there are laws and fines in our country about the use of helmets, bikers do not follow them. Solving this problem manually is a matter of a lot of money and time. So a system needs to be made which can automatically classify those who wear helmets and those who don't. There is already a system in place that wealthy nations have created that Bangladesh cannot afford. As a result, I made the decision to develop a system that will help in the authority's classification of helmet detection and number plate recognition. An image processing and convolutional neural network system are used in this case to identify the motorcyclists who are breaking the helmet rules. The system consists of motorcycle detection, categorization of wearing a helmet vs not wearing one, and motorcycle license plate identification. Using the YOLOv7 function, the motorcycles are detected. Once the motorcycle has been identified using a convolutional neural network, it is decided whether or not the rider is wearing a helmet. When a rider without a helmet is recognized, OpenCV Tesseract OCR is used to find the motorcycle's license plate. In the future, I will work on automatic case file systems that violate the helmet law and will increase the dataset to get higher accuracy



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10. CONCLUSION

According to the data shown above, it is clear that YOLO object detection is ideally suited for real-time processing and was successful in properly classifying and localizing all object classes. The suggested end-to-end model was successfully constructed and includes all the necessary components to be automated and deployed for monitoring. In order to extract the license plates, several approaches are used while taking into account various scenarios, such as many helmetless motorcyclists, and are created to handle the majority of situations. Because they are all open source, the libraries and software utilized in our project are incredibly versatile and economical. The initiative was primarily created to address the issue of ineffective traffic management. As a result, we can conclude that if implemented by any traffic management agency, it would facilitate and improve the effectiveness of their work.

MITATIONS

In the work, the output is not much satisfactory. It may be because of the angle of the image data which is on basis of Dhaka city, and many rural areas. Another reason is an augmentation of all images. If we used augmentation images then maybe paper accuracy will increase. Further, I will try to take images at perfect angles to get higher mAP. And along with this work, I will try to get the flow of each biker separately and use other models to compare the mAP. I will also try to implement it as an automatic case final system for easily finding the violated bikers who don't use helmets and automatic cases in that bikers.



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OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION 9

Introduction–Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents–

Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

69

UNIT II PROBLEM SOLVING METHODS 9

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search

Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal

Decisions in Games – Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGE REPRESENTATION 9

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining- Backward

Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and

Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWARE AGENTS 9

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS 9

AI applications – Language Models – Information Retrieval- Information Extraction – Natural

Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving

TOTAL :45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

TEXT BOOKS:

1 S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third

Edition, 2009.

2 I. Bratko, "Prolog: Programming for Artificial Intelligence", Fourth edition, Addison-Wesley


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4. Gerhard Weiss, "Multi Agent Systems", Second Edition, MIT Press, 2013.
5. David L. Poole and Alan K. Mackworth, "Artificial Intelligence: Foundations of Computational Agents", Cambridge University Press, 2010.



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**AGRICULTURAL CROP RECOMMENDATIONS BASED ON
PRODUCTIVITY AND SEASON**

A PROJECT REPORT

Submitted by

ARIHARAN T (311818104005),

SANJAY KHANNA S (311818104041),

MOHAMMED AADIL A (311819104020)

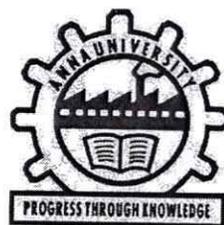
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Project Viva-Voice held on 18/05/2023



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EXTERNAL EXAMINER

ABSTRACT

As a coastal state, Tamil Nadu faces uncertainty in agriculture which decreases its production. With more population and area, more productivity should be achieved but it cannot be reached. Farmers have words-of-mouth in past decades but now it cannot be used due to climatic factors. Agricultural factors and parameters make the data to get insights about the Agri-facts. Growth of IT world drives some highlights in Agriculture Sciences to help farmers with good agricultural information. Intelligence of applying modern technological methods in the field of agriculture is desirable in this current scenario. Machine Learning Techniques develops a well-defined model with the data and helps us to attain predictions. Agricultural issues like crop prediction, rotation, water requirement, fertilizer requirement and protection can be solved. Due to the variable climatic factors of the environment, there is a necessity to have a efficient technique to facilitate the crop cultivation and to lend a hand to the farmers in their production and management. This may help upcoming agriculturalists to have a better agriculture. System of recommendations can be provided to a farmer to help them in crop cultivation with the help of data mining. To implement such an approach, crops are recommended based on its climatic factors and quantity. Data Analytics paves a way to evolve useful extraction from agricultural database. Crop Dataset has been analyzed and recommendation of crops is done based on productivity and season. The different algorithms like Linear Regression Multilayer Perceptron(LRMLP) which provides the accuracy comparison and to help the farmers to choose the correct crop for the various climatic condition



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6. CONCLUSION

The significance of management of crops was studied vastly. Farmers need assistance with recent technology to grow their crops. Proper prediction of crops can be informed to agriculturists in time basis. Many Machine Learning techniques have been used to analyze the agriculture parameters. Some of the techniques in different aspects of agriculture are studied in a literature study. Blooming Neural networks, soft computing techniques plays significant part in providing recommendations. Considering the parameter like production and season, more personalized and relevant recommendations can be given to farmers which makes them yield good volume of production. The Linear Regression Multilayer Perceptron (LRMLP) which provides the greatest accuracy in the different comparisons of various algorithms



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- To understand the different ways of designing software agents
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SECURE PERSONAL HEALTH RECORD SHARING WITH BLOCK CHAIN

A PROJECT REPORT

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KARTHIKEYAN R (311818104019),

AHAMAD BASHA K (311819104301)

in partial fulfilment for the award of the degree of

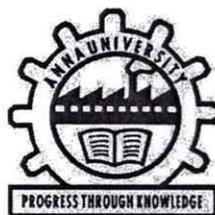
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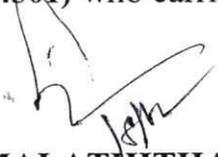
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INTERNAL EXAMINER



EXTERNAL EXAMINER
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ABSTRACT

Block chain have been an interesting research area for a long time and the benefits it provides have been used by a number of various industries. Similarly, the healthcare sector stands to benefit immensely from the block chain technology due to security, privacy, confidentiality and decentralization. Nevertheless, the Electronic Health Record (EHR) systems face problems regarding data security, integrity and management. In this paper, we discuss how the block chain technology can be used to transform the EHR systems and could be a solution of these issues. . The aim of our proposed framework is firstly to implement block chain technology for EHR and secondly to provide secure storage of electronic records by defining granular access rules for the users of the proposed framework. . This framework provides the EHR system with the benefits of having a scalable, secure and integral block chain-based solution. Wireless medical sensor networks certainly improve patient's quality-of-care without disturbing their comfort. However, there exist many potential security threats to the patient sensitive physiological data transmitted over the public channels and stored in the back-end systems. An eavesdropper, having a powerful receiver antenna, may be able to capture the patient data from the medical sensors and therefore knows the patient's health condition. He may even post the patient's health condition on social network, which can pose a serious threat to patient privacy. Impersonation is a security threat to the patient data authenticity.

CHAPTER 7

CONCLUSION

In order to detect errors in big data sets from sensor network systems, a novel approach is developed with cloud computing. Firstly, error classification for big data sets is presented. Secondly, the correlation between sensor network systems and the scale-free complex networks are introduced. According to each error type and the features from scale-free networks, we have proposed a time-efficient strategy for detecting and locating errors in big data sets on cloud. With the experiment results from our cloud computing environment WAMP server, it is demonstrated that

- 1) the proposed scale-free error detecting approach can significantly reduce the time for fast error detection in numeric big data sets,
- 2) the proposed approach achieves similar error selection ratio to non-scale-free error detection approaches. In future, in accordance with error detection for big data sets from sensor network systems on cloud, the issues such as error correction, big data cleaning and recovery will be further explored.



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OBJECTIVES:

- To understand Smart Objects and IoT Architectures
- To learn about various IOT-related protocols
- To build simple IoT Systems using Arduino and Raspberry Pi.
- To understand data analytics and cloud in the context of IoT
- To develop IoT infrastructure for popular applications

UNIT I FUNDAMENTALS OF IoT 9

Evolution of Internet of Things - Enabling Technologies – IoT Architectures: oneM2M, IoT World

Forum (IoTWF) and Alternative IoT models – Simplified IoT Architecture and Core IoT Functional

Stack – Fog, Edge and Cloud in IoT – Functional blocks of an IoT ecosystem – Sensors, Actuators, Smart Objects and Connecting Smart Objects

UNIT II IoT PROTOCOLS 9

IoT Access Technologies: Physical and MAC layers, topology and Security of IEEE 802.15.4,

802.15.4g, 802.15.4e, 1901.2a, 802.11ah and LoRaWAN – Network Layer: IP versions, Constrained Nodes and Constrained Networks – Optimizing IP for IoT: From 6LoWPAN to 6Lo,

Routing over Low Power and Lossy Networks – Application Transport Methods: Supervisory Control and Data Acquisition – Application Layer Protocols: CoAP and MQTT

UNIT III DESIGN AND DEVELOPMENT 9

Design Methodology - Embedded computing logic - Microcontroller, System on Chips - IoT system

building blocks - Arduino - Board details, IDE programming - Raspberry Pi - Interfaces and Raspberry Pi with Python Programming.

UNIT IV DATA ANALYTICS AND SUPPORTING SERVICES 9

Structured Vs Unstructured Data and Data in Motion Vs Data in Rest – Role of Machine Learning

– No SQL Databases – Hadoop Ecosystem – Apache Kafka, Apache Spark – Edge Streaming Analytics and Network Analytics – Xively Cloud for IoT, Python Web Application Framework –

Django – AWS for IoT – System Management with NETCONF-YANG

UNIT V CASE STUDIES/INDUSTRIAL APPLICATIONS 9

Cisco IoT system - IBM Watson IoT platform – Manufacturing - Converged Plantwide Ethernet

Model (CPwE) – Power Utility Industry – GridBlocks Reference Model - Smart and Connected

Cities: Layered architecture, Smart Lighting, Smart Parking Architecture and Smart Traffic Control

TOTAL : 45**PERIODS****OUTCOMES:**

Upon completion of the course, the student should be able to:

- Explain the concept of IoT.
- Analyze various protocols for IoT.
- Design a PoC of an IoT system using Rasperry Pi/Arduino
- Apply data analytics and use cloud offerings related to IoT.


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□ Analyze applications of IoT in real time scenario

TEXTBOOK:

1. David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Rob Barton and Jerome Henry, "IoT Fundamentals: Networking Technologies, Protocols and Use Cases for Internet of Things, Cisco Press, 2017

96

REFERENCES:

1. Arshdeep Bahga, Vijay Madiseti, "Internet of Things – A hands-on approach", Universities Press, 2015

2. Olivier Hersent, David Boswarthick, Omar Elloumi , "The Internet of Things – Key applications and Protocols", Wiley, 2012 (for Unit 2).

3. Jan Ho" ller, Vlasios Tsiatsis , Catherine Mulligan, Stamatis , Karnouskos, Stefan Avesand. David Boyle, "From Machine-to-Machine to the Internet of Things - Introduction to a New Age of Intelligence", Elsevier, 2014.

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https://www.ibm.com/smarterplanet/us/en/?ca=v_smarterplanet

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HEART STROKE DIAGNOSIS AND PREDICTIVE SYSTEM USING MULTI-MODEL SUPERVISED TECHNIQUE

A PROJECT REPORT

Submitted by

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FARDEEN SHA M (311819104010)
SYED SULAIMAN SAIT H (311819104048)

In partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

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ANNA UNIVERSITY: CHENNAI 600 025

MAY 2023



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BONAFIDE CERTIFICATE

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Mrs.Muthupandeeswari,

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Assistant Professor,

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Submitted for Viva-Voice examination held on....18-05-2023



INTERNAL EXAMINER



EXTERNAL EXAMINER

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ABSTRACT

Global risks to public health include cardiovascular and persistent respiratory conditions, which account for roughly 19 million global fatalities each year. With the help of technical developments in medical science, such as constant tracking of physiological factors like blood pressure, cholesterol levels, blood glucose, etc., this high fatality rate can be decreased. The cutting-edge values of these vital physiological or vital sign metrics not only allow for in-the-moment assistance from medical professionals and caretakers, but they also assist patients in managing their health state by getting pertinent, timely notifications and guidance from healthcare professionals. In this research, we suggest a machine-learning-based forecast and categorization method to identify associated vital signs' future values for both chronic respiratory and cardiovascular illnesses. The suggested system can categorise patients' health state based on the forecast of future values and alert carers and medical professionals. We used an actual vital sign collection in this machine-learning-based prediction and categorization algorithm. Several regression techniques, including linear regression and polynomial regression of degrees 2, 3, and 4, have been tried to forecast the vital sign values for the upcoming 1–3 minutes. Vital sign predictions are used for carers in 60-second intervals and for emergency medical help in 3-minute intervals. The patient's general health is evaluated using three machine learning classifiers, namely Support Vector Machine (SVM), Naive Bayes, and Decision Tree, Random Forest, K-Nearest neighbour based on the expected vital sign readings. Our findings demonstrate that the Decision Tree is useful in providing patients with prompt medical treatment and can accurately categorise a patient's health state based on aberrant vital sign values. Choice Tree.

KEYWORDS: Stroke , Data Analysis , electronic health records, predictive analytics.


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CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 CONCLUSION

Machine learning techniques have shown promising results in predicting heart stroke. Several studies have compared the performance of different machine learning algorithms in predicting heart stroke, and the results have varied depending on the dataset, features, and evaluation metrics used. In general, studies have found that ensemble methods such as random forests and gradient boosting classifiers perform better than other algorithms, such as logistic regression, support vector machines, and neural networks. However, the performance differences between these algorithms may not be statistically significant in all cases. It is also important to note that the quality of the data and the choice of features can have a significant impact on the performance of the model. Preprocessing and feature selection techniques, such as imputation, normalization, and feature engineering, can improve the performance of the model by reducing noise and extracting relevant information. Overall, machine learning techniques have the potential to improve the accuracy and efficiency of heart stroke prediction, and further research is needed to identify the most effective algorithms and feature selection techniques for different datasets and evaluation metrics. The prevention and disease progression can be aided by early identification. Early diagnosis and the finding of important causal factors can be aided by machine learning technologies. The proposed technique generates a deep learning model that can predict cardiovascular illnesses and heart attacks. The optimal solution for the job is the SVM algorithm. The model suggests that new machine learning algorithms usually lead to better prediction accuracy. The prevention and disease progression can be aided by early identification. Early diagnosis and the finding of important causal factors can be aided by machine learning technologies. The proposed technique generates a deep learning model that can predict cardiovascular illnesses and heart attacks. The optimal solution for the job is the SVM algorithm. The model suggests that new machine learning algorithms usually lead to better prediction accuracy.

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- To know about the various applications of AI.

UNIT I INTRODUCTION 9

Introduction-Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents-

Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

69

UNIT II PROBLEM SOLVING METHODS 9

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search

Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal

Decisions in Games – Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGE REPRESENTATION 9

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining- Backward

Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and

Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWARE AGENTS 9

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS 9

AI applications – Language Models – Information Retrieval- Information Extraction – Natural

Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving

TOTAL :45 PERIODS

OUTCOMES:

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

TEXT BOOKS:

1 S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third

Edition, 2009.

2 I. Bratko, "Prolog: Programming for Artificial Intelligence", Fourth edition, Addison-Wesley

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REFERENCES:

1. M. Tim Jones, "Artificial Intelligence: A Systems Approach(Computer Science)", Jones and Bartlett Publishers, Inc.; First Edition, 2008
2. Nils J. Nilsson, "The Quest for Artificial Intelligence", Cambridge University Press, 2009.
3. William F. Clocksin and Christopher S. Mellish," Programming in Prolog: Using the ISO Standard", Fifth Edition, Springer, 2003.
4. Gerhard Weiss, "Multi Agent Systems", Second Edition, MIT Press, 2013.
5. David L. Poole and Alan K. Mackworth, "Artificial Intelligence: Foundations of Computational Agents", Cambridge University Press, 2010.

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OBJECTIVES:

- To understand the need for machine learning for various problem solving
- To study the various supervised, semi-supervised and unsupervised learning algorithms in machine learning
- To understand the latest trends in machine learning
- To design appropriate machine learning algorithms for problem solving

UNIT I INTRODUCTION 9

Learning Problems – Perspectives and Issues – Concept Learning – Version Spaces and Candidate Eliminations – Inductive bias – Decision Tree learning – Representation – Algorithm – Heuristic Space Search.

UNIT II NEURAL NETWORKS AND GENETIC ALGORITHMS 9

Neural Network Representation – Problems – Perceptrons – Multilayer Networks and Back Propagation Algorithms – Advanced Topics – Genetic Algorithms – Hypothesis Space Search – Genetic Programming – Models of Evaluation and Learning.

UNIT III BAYESIAN AND COMPUTATIONAL LEARNING 9

Bayes Theorem – Concept Learning – Maximum Likelihood – Minimum Description Length Principle – Bayes Optimal Classifier – Gibbs Algorithm – Naïve Bayes Classifier – Bayesian Belief Network – EM Algorithm – Probability Learning – Sample Complexity – Finite and Infinite Hypothesis Spaces – Mistake Bound Model.

UNIT IV INSTANT BASED LEARNING 9

K- Nearest Neighbour Learning – Locally weighted Regression – Radial Basis Functions – Case Based Learning.

UNIT V ADVANCED LEARNING 9

Learning Sets of Rules – Sequential Covering Algorithm – Learning Rule Set – First Order Rules – Sets of First Order Rules – Induction on Inverted Deduction – Inverting Resolution – Analytical Learning – Perfect Domain Theories – Explanation Base Learning – FOCL Algorithm – Reinforcement Learning – Task – Q-Learning – Temporal Difference Learning

TOTAL :45 PERIODS**OUTCOMES:**

At the end of the course, the students will be able to

- Differentiate between supervised, unsupervised, semi-supervised machine learning approaches
- Discuss the decision tree algorithm and identify and overcome the problem of overfitting
- Discuss and apply the back propagation algorithm and genetic algorithms to various problems
- Apply the Bayesian concepts to machine learning
- Analyse and suggest appropriate machine learning approaches for various types of problems

TEXT BOOK:

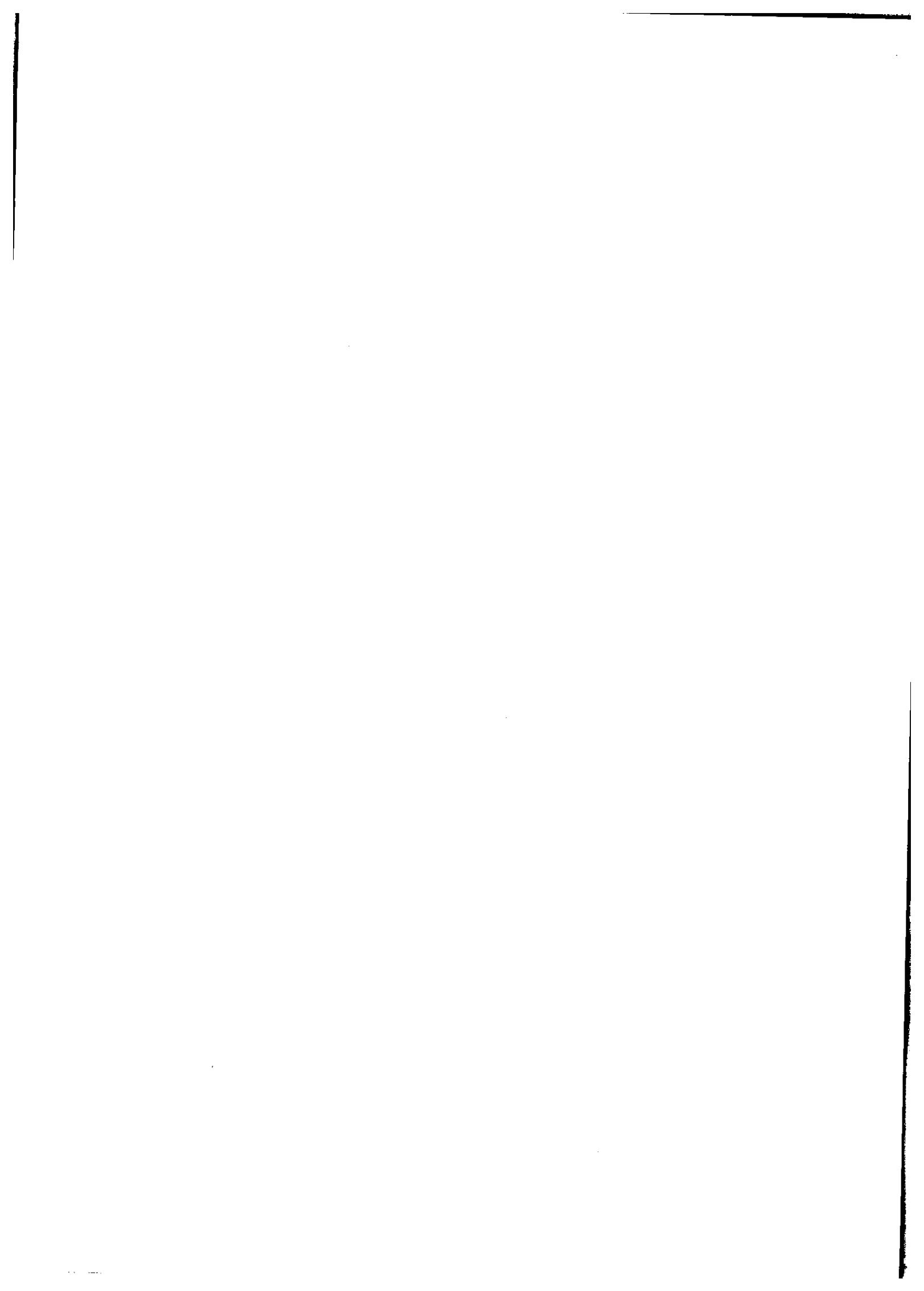
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1. Ethem Alpaydin, “Introduction to Machine Learning (Adaptive Computation and Machine Learning)”, The MIT Press 2004.
2. Stephen Marsland, “Machine Learning: An Algorithmic Perspective”, CRC Press, 2009.

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AUTOMATIC DROWSINESS DETECTION AND ALERT SYSTEM USING TRANSFER LEARNING

A PROJECT REPORT

Submitted by

NAFISA MAHIRA K.M (311819104029),
SAJITHA N (311819104038),
SHAAFIA TASNEEM N (311819104042)

in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

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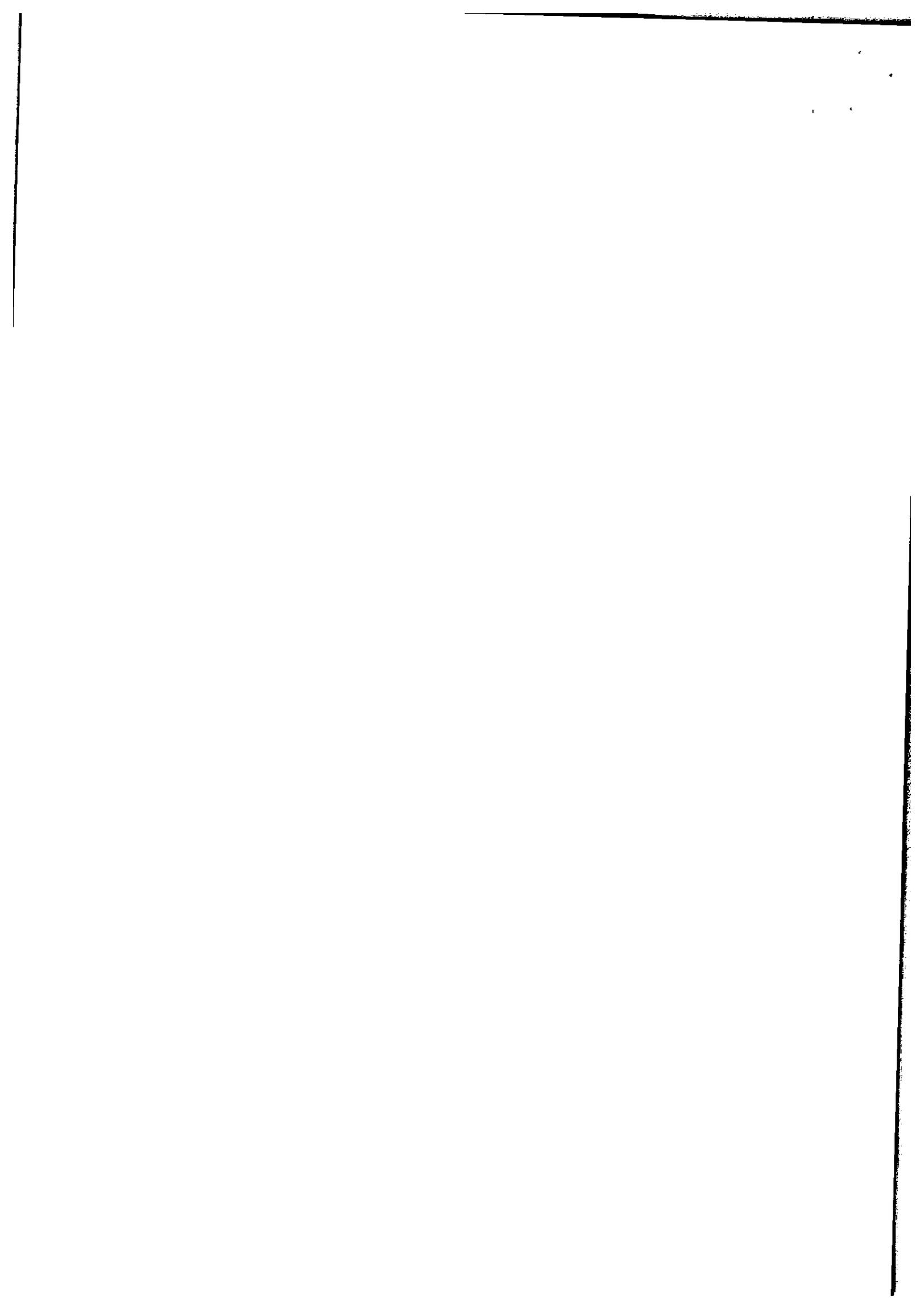
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ANNA UNIVERSITY: CHENNAI 600 025

MAY 2023



ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this Project report "AUTOMATIC DROWSINESS DETECTION AND ALERT SYSTEM USING TRANSFER LEARNING" is a bonafide work of NAFISA MAHIRA K.M (311819104029), SAJITHA N (311819104038) & SHAAFIA TASNEEM N(311819104042) who carried out the project work under my supervision.



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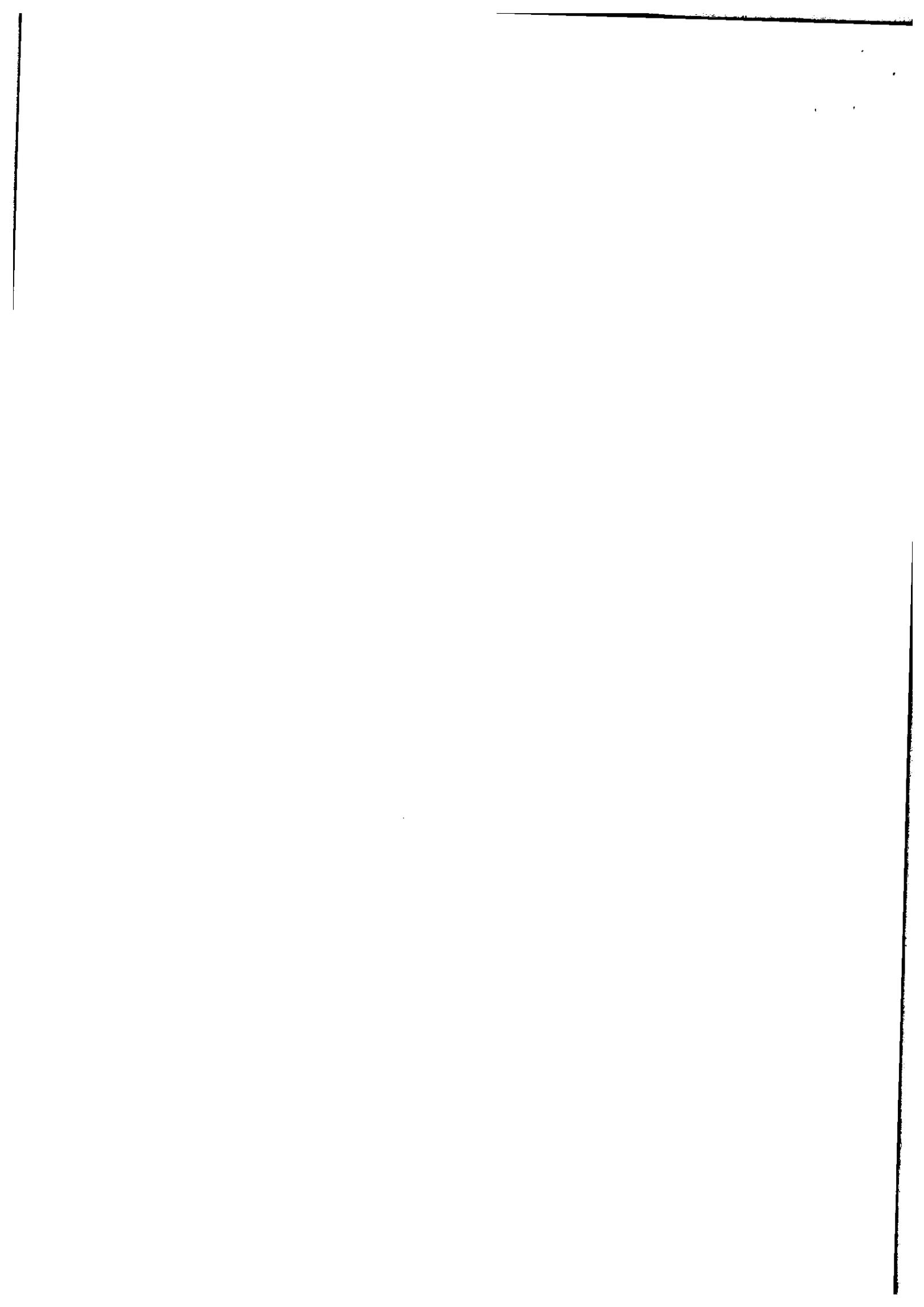
Project Viva-Voice held on 18/05/2023



INTERNAL EXAMINER



EXTERNAL EXAMINER



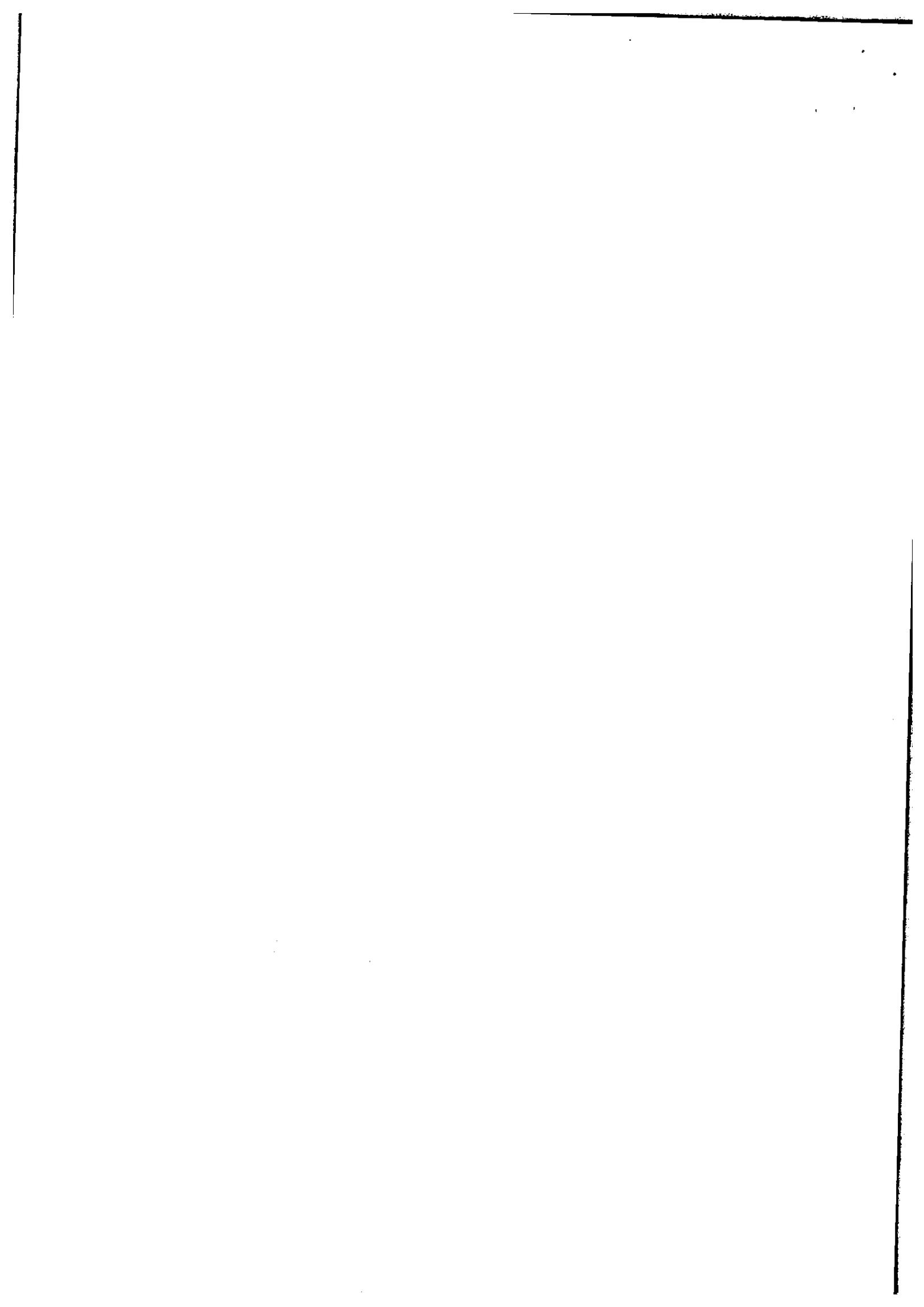
ABSTRACT

Drowsy driving is a contributing factor in majority of the car accidents occurring across the world. As a result, the most important approach for preventing these accidents is driver sleepiness detection, which can help us to reduce many road accidents. The goal of this article is to create a Sleepiness Detection System that detects whether a driver's eyes are closed for a few seconds, and then alerts the driver via an alarm. In this research, deep learning is used to suggest a new frame that classifies the driver's eye condition, i.e., open or closed. When a driver is determined to be sleepy, the proposed system sounds a beep on reaching a certain saturation point of the drowsiness measure. The proposed work is evaluated on a large part of MRL eye dataset consisting of 48000 images and it shows an accuracy of 86.05% using CNN model.



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CHAPTER 9

CONCLUSION

1. SUMMARY

The drowsiness detection system developed is capable of detecting drowsiness in a rapid manner. The system can differentiate normal eye blink and drowsiness which can prevent the driver from entering the state of sleepiness while driving. The system works well even in the case of drivers wearing spectacles and under low-light conditions also. During the monitoring, the system is able to decide if the eyes are opened or closed. When the eyes have been closed for about seven frames, the alarm beeps to alert the driver. By doing this many accidents will be reduced and it also provides safe life for the driver and vehicle safety. A system for driver safety and car security is presented only in luxurious and costly cars. Using a drowsiness detection system, driver safety can be implemented in normal cases.

The ability to detect and alert individuals who are becoming drowsy is crucial for preventing accidents and ensuring safety in a variety of scenarios, such as operating heavy machinery, working in hazardous environments, and even in medical settings where healthcare professionals need to remain alert during long shifts.

Transfer learning is a machine learning technique that involves reusing pre-trained models for new applications. It has shown great potential in improving the accuracy and efficiency of automatic drowsiness detection and alert systems. By leveraging pre-trained models, these systems can detect drowsiness in a variety of contexts and adapt to different individuals' behaviours and



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OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION 9

Introduction-Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents–

Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.
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UNIT II PROBLEM SOLVING METHODS 9

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AI applications – Language Models – Information Retrieval- Information Extraction – Natural

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TOTAL :45 PERIODS**OUTCOMES:**

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
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2 I. Bratko, "Prolog: Programming for Artificial Intelligence", Fourth edition, Addison-Wesley

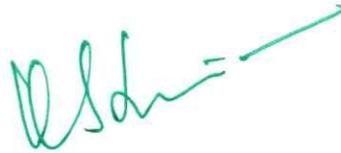

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BRAIN STROKE ANALYSIS

A PROJECT REPORT

Submitted by

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MUSTHABUSHIRA S M	311819104028

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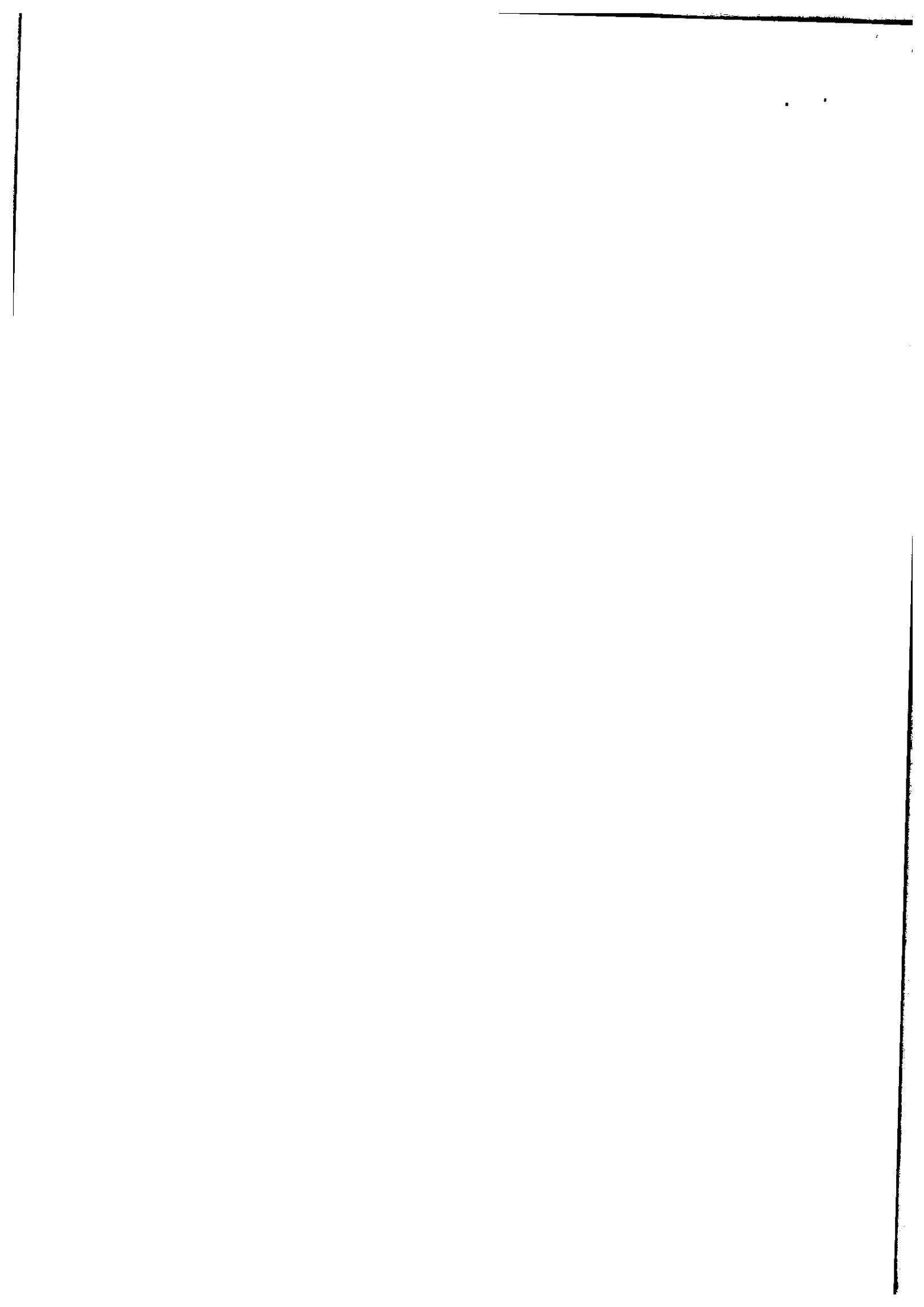


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BONAFIDE CERTIFICATE

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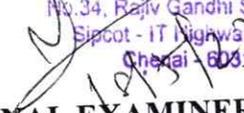
Project Viva-Voice held on 18-05-2023



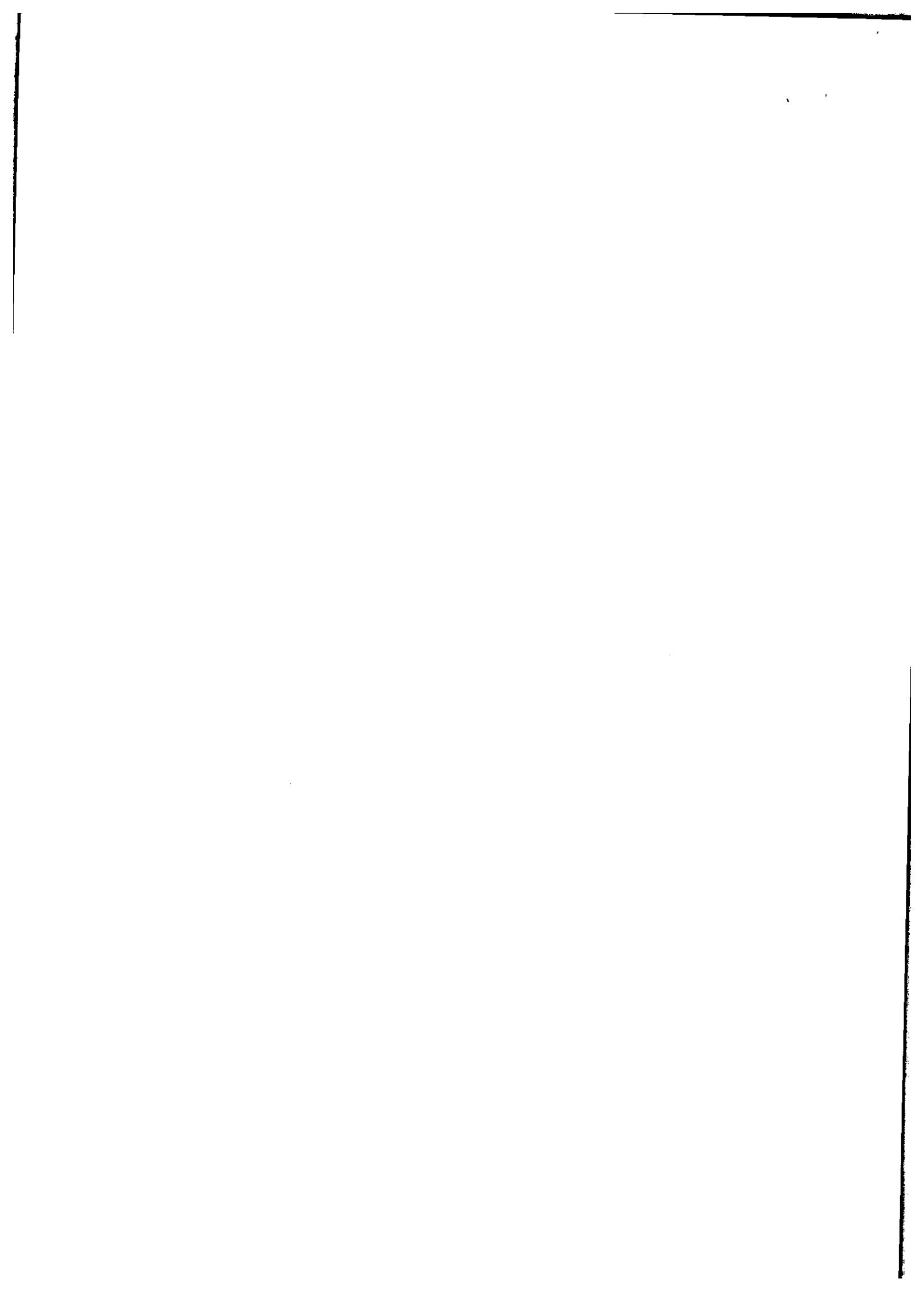
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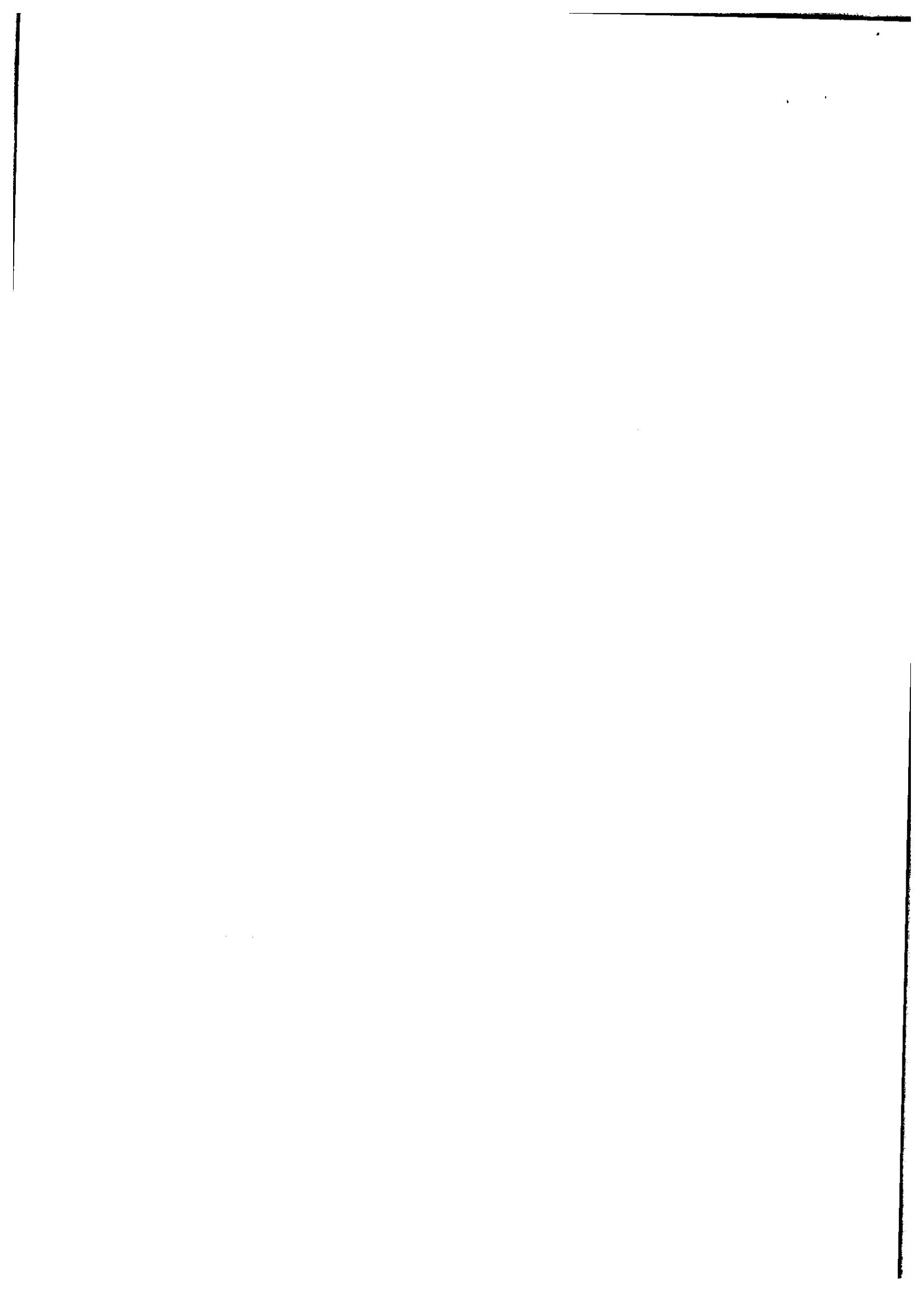
ABSTRACT

Stroke is a medical disorder in which the blood arteries in the brain are ruptured, causing damage to the brain. When the supply of blood and other nutrients to the brain is interrupted, symptoms might develop. According to the World Health Organization (WHO), stroke is the greatest cause of death and disability globally. Early recognition of the various warning signs of a stroke can help to reduce the severity of the stroke. A stroke or a brain attack is a severe medical emergency, therefore, getting help as soon as possible is critical. Seeking medical help right away can help prevent brain damage and other complications. Many predictive strategies have been widely used in clinical decision-making, such as forecasting disease occurrence, disease outcome, and supporting doctors in prescribing disease treatment. Using a deep learning model on a brain disease dataset, this method of predicting analytical techniques for stroke was carried out. In this model, the goal is to create a deep learning application that identifies brain strokes using a convolution neural network. In addition, three models for predicting the outcomes have been developed. This suggested study uses a CT scan (computed tomography) image dataset to predict strokes.



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CHAPTER 9

CONCLUSION

In this project, a research to classify Brain stroke using deep learning techniques was developed. This is a complex problem that has already been approached several times with different techniques. While good results have been achieved using feature engineering, this project focused on feature learning, which is one of DL promises. While feature engineering is not necessary, image pre-processing boosts classification accuracy. Hence, it reduces noise on the input data. Nowadays, Brain stroke detection software includes the use of feature engineering. A solution totally based on feature learning does not seem close yet because of a major limitation. Thus, brain stroke classification could be achieved by means of deep learning techniques.

FUTURE WORK

Future work would involve more optimization on hyperparameters and model aspects such as which layers to freeze versus make trainable during transfer learning. Due to computing resource and time constraints, most model implementation decisions were made by examining the convergence of the model and relative metrics from training versus validation, but an exhaustive hyperparameter search would have been a more empirical approach.

REFERENCES

- [1] Statistics Bureau. Japan statistical yearbook 2017. Technical report, Ministry of Internal Affairs and Communications. 2017.
- [2] Turin TC, Kokubo Y, Murakami Y, Higashiyama A, Rumana N, Watanabe M, Okamura T. Lifetime risk of stroke in japan. Stroke. 2010;41(7):1552-4.


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DATA WAREHOUSING AND DATA MINING

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OBJECTIVES:

- To understand data warehouse concepts, architecture, business analysis and tools
- To understand data pre-processing and data visualization techniques
- To study algorithms for finding hidden and interesting patterns in data
- To understand and apply various classification and clustering techniques using tools.

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UNIT I DATA WAREHOUSING, BUSINESS ANALYSIS AND ON-LINE

ANALYTICAL

PROCESSING (OLAP) 9

Basic Concepts - Data Warehousing Components – Building a Data Warehouse – Database Architectures for Parallel Processing – Parallel DBMS Vendors - Multidimensional Data Model –

Data Warehouse Schemas for Decision Support, Concept Hierarchies -Characteristics of OLAP

Systems – Typical OLAP Operations, OLAP and OLTP.

UNIT II DATA MINING – INTRODUCTION 9

Introduction to Data Mining Systems – Knowledge Discovery Process – Data Mining Techniques

– Issues – applications- Data Objects and attribute types, Statistical description of data, Data Preprocessing – Cleaning, Integration, Reduction, Transformation and discretization, Data Visualization, Data similarity and dissimilarity measures.

UNIT III DATA MINING - FREQUENT PATTERN ANALYSIS 9

Mining Frequent Patterns, Associations and Correlations – Mining Methods- Pattern Evaluation

Method – Pattern Mining in Multilevel, Multi Dimensional Space – Constraint Based Frequent

Pattern Mining, Classification using Frequent Patterns

UNIT IV CLASSIFICATION AND CLUSTERING 9

Decision Tree Induction - Bayesian Classification – Rule Based Classification – Classification by

Back Propagation – Support Vector Machines – Lazy Learners – Model Evaluation and Selection-Techniques to improve Classification Accuracy.

Clustering Techniques – Cluster analysis-Partitioning Methods - Hierarchical Methods Density

Based Methods - Grid Based Methods – Evaluation of clustering – Clustering high dimensional

data- Clustering with constraints, Outlier analysis-outlier detection methods.

UNIT V WEKA TOOL 9

Datasets – Introduction, Iris plants database, Breast cancer database, Auto imports database -

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Introduction to WEKA, The Explorer – Getting started, Exploring the explorer, Learning algorithms,
Clustering algorithms, Association–rule learners.

TOTAL: 45 PERIODS

OUTCOMES:

Upon completion of the course, the students should be able to:

- Design a Data warehouse system and perform business analysis with OLAP tools.
- Apply suitable pre-processing and visualization techniques for data analysis
- Apply frequent pattern and association rule mining techniques for data analysis
- Apply appropriate classification and clustering techniques for data analysis

TEXT BOOK:

1. Jiawei Han and Micheline Kamber, “Data Mining Concepts and Techniques”, Third Edition,
Elsevier, 2012.

REFERENCES:

1. Alex Berson and Stephen J.Smith, “Data Warehousing, Data Mining & OLAP”, Tata McGraw – Hill Edition, 35th Reprint 2016.
2. K.P. Soman, Shyam Diwakar and V. Ajay, “Insight into Data Mining Theory and Practice”,
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3. Ian H.Witten and Eibe Frank, “Data Mining: Practical Machine Learning Tools and Techniques”, Elsevier, Second Edition.

PROXY RE-ENCRYPTION FOR SECURE MEDICAL DATA SHARING IN CLOUDS

A PROJECT REPORT

Submitted by

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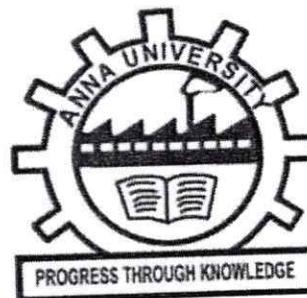
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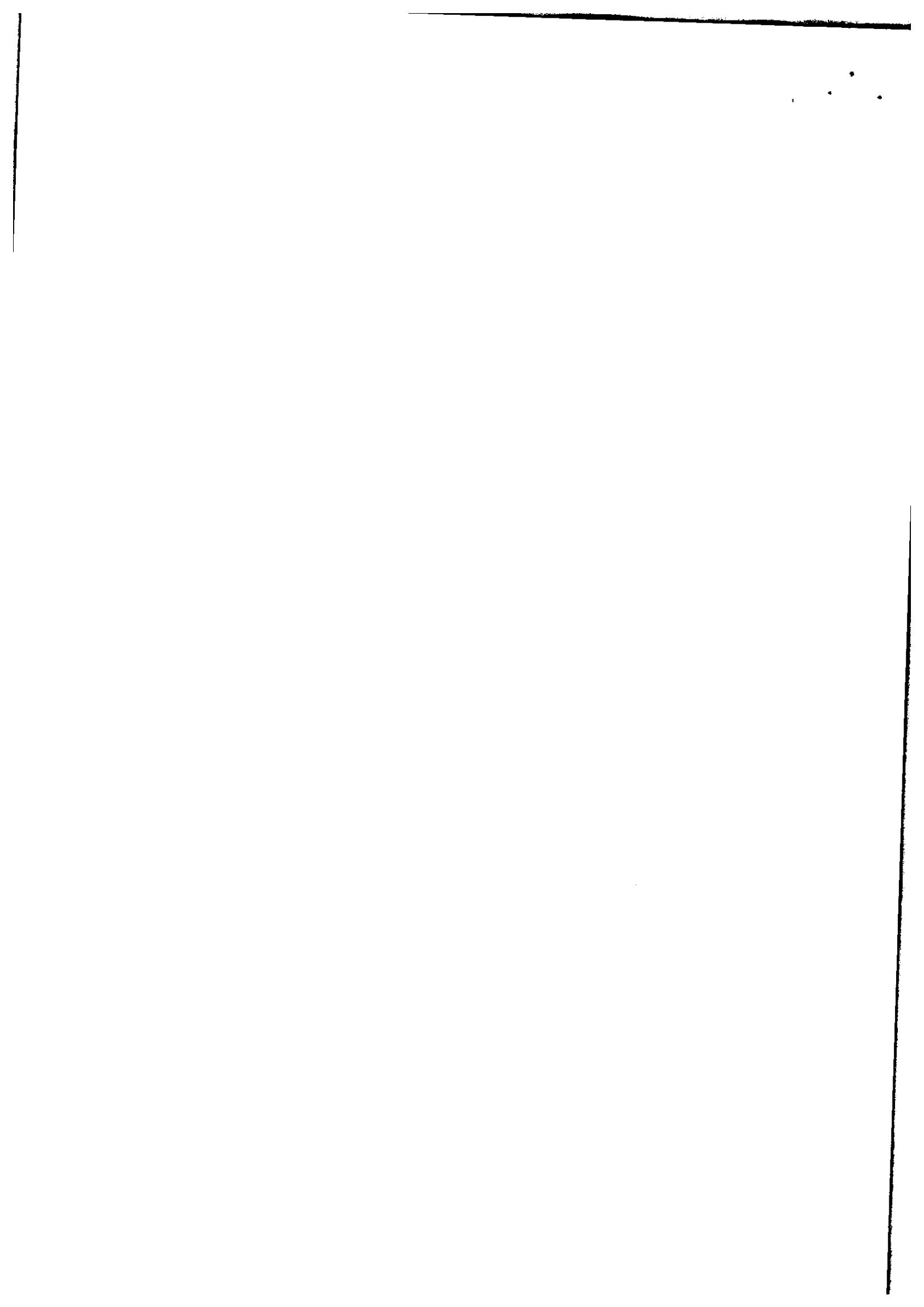


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MAY 2023



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Certified that this project report "PROXY RE-ENCRYPTION FOR SECURE MEDICAL DATA SHARING IN CLOUDS" is the bonafide work of BHUVANESHWARI V.B (311819104302), HAMEED JAHUFAR HAJA ALAUDIN N.H (311819104012), BAZEER AHAMAD .V (311819104008) who carried out the project work under my supervision


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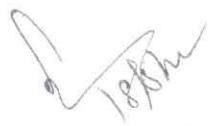
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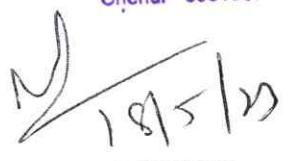
Mohammed Sathak A J College of Engineering

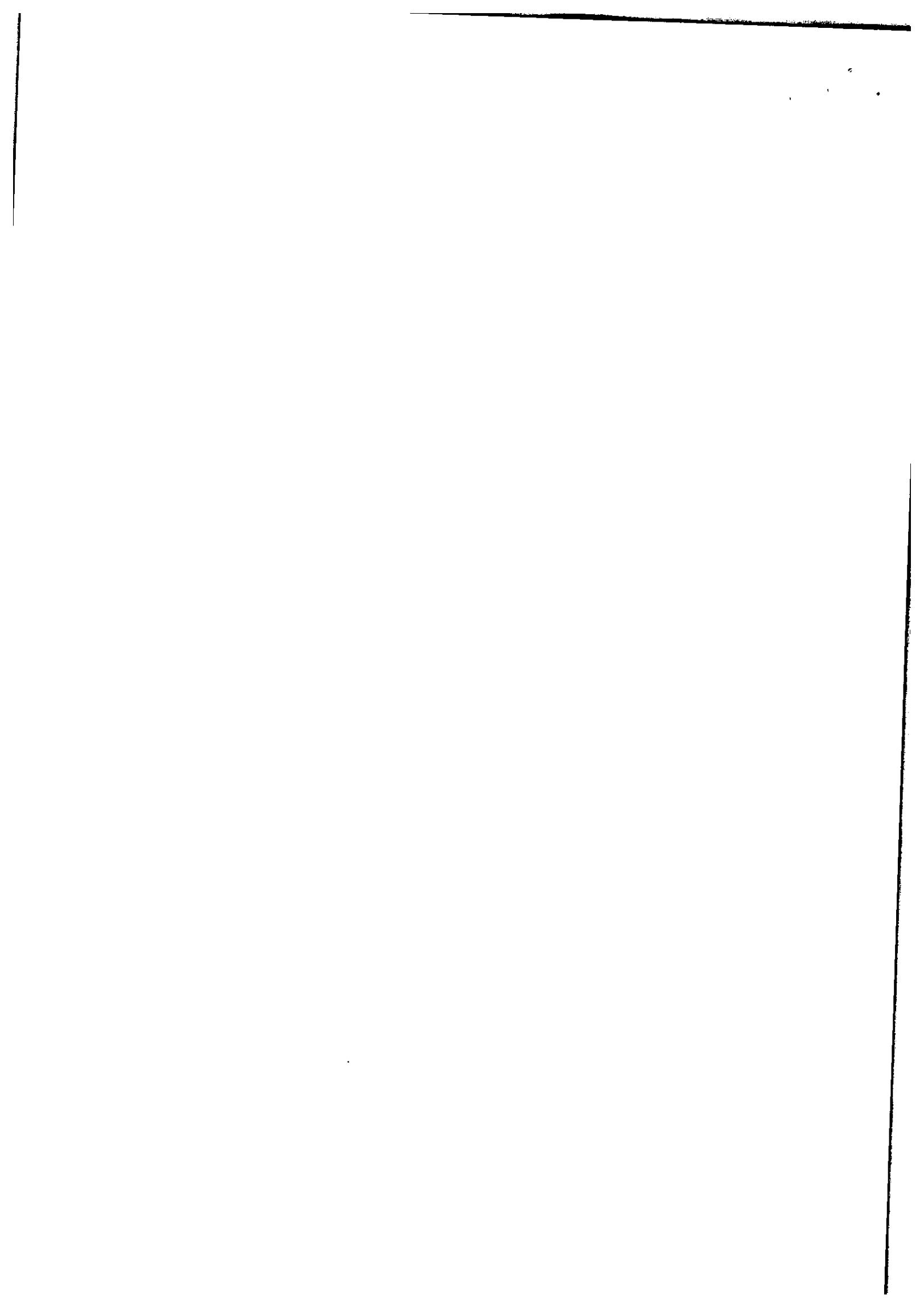
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EXTERNAL EXAMINER



ABSTRACT

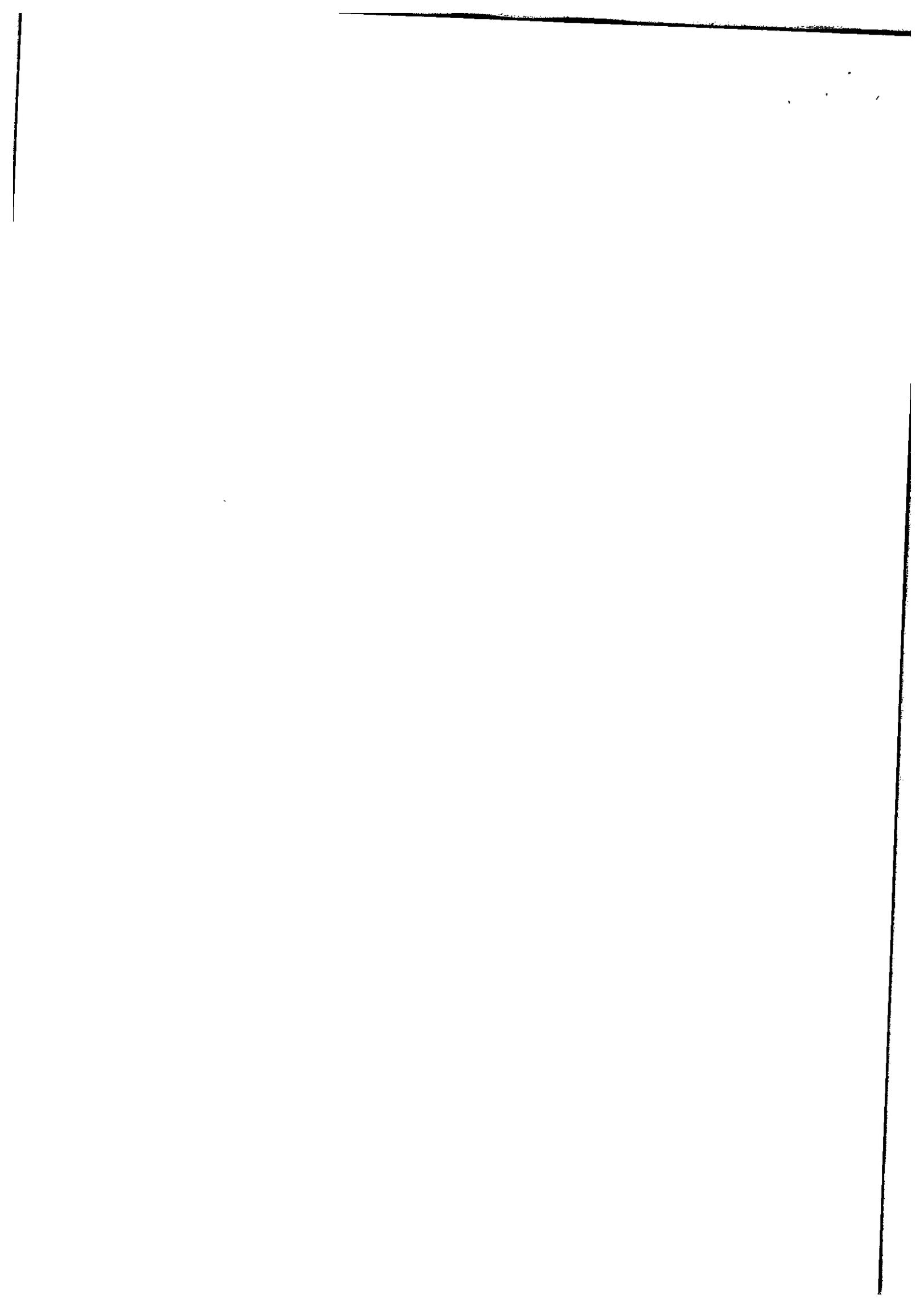
In proxy re-encryption schemes, users delegate their encrypted files to other users by using re-encryption keys, which elegantly transfers the users' burden to the cloud servers. Moreover, one can adopt conditional proxy re-encryption schemes to employ their access control policy on the files to be shared. However, we recognize that the size of re-encryption keys will grow linearly with the number of the condition values, which may be impractical in low computational devices. data security has become a critical issue in various kinds of applications. Users may prefer storing their files in an encrypted manner and delegating decryption rights efficiently. In order to protect the files stored in the clouds, the owners can encrypt the files by using their keys before uploading the files to the clouds. Still, a user needs to be online to share her encrypted files because she needs to send her keys to her friends. It is extremely inefficient because of the heavy overhead on the user. Fortunately, proxy re-encryption schemes, enable users to share their encrypted files with other users by using re-encryption keys.

A Cloud storage system, consisting of a collection of storage servers, providing long term storage services over the internet. Storing data in a third party's cloud system causes serious concern over data confidentiality. To keep sensitive user data confidential against untrusted servers, cryptographic methods are used to provide security and access control in clouds. As the data is shared over the network, it is needed to be encrypted.



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CHAPTER 7

7.CONCLUSION

In cloud computing security is an important aspect of quality of service. To keep the sensitive user data confidential against untrusted servers several proxy re-encryption techniques are used. This scheme performs arbitrary computations on encrypted data without decrypting it. This scheme can avoid potential security risks that are raised by the delay of issuing the PRE keys



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and

OBJECTIVES:

- To understand the concept of cloud computing.
- To appreciate the evolution of cloud from the existing technologies.
- To have knowledge on the various issues in cloud computing.
- To be familiar with the lead players in cloud.
- To appreciate the emergence of cloud as the next generation computing paradigm.

UNIT I INTRODUCTION 9

Introduction to Cloud Computing – Definition of Cloud – Evolution of Cloud Computing – Underlying Principles of Parallel and Distributed Computing – Cloud Characteristics – Elasticity in

Cloud – On-demand Provisioning.

79

UNIT II CLOUD ENABLING TECHNOLOGIES 10

Service Oriented Architecture – REST and Systems of Systems – Web Services – Publish-Subscribe Model – Basics of Virtualization – Types of Virtualization – Implementation Levels of

Virtualization – Virtualization Structures – Tools and Mechanisms – Virtualization of CPU – Memory – I/O Devices – **Virtualization Support and Disaster Recovery.**

UNIT III CLOUD ARCHITECTURE, SERVICES AND STORAGE 8

Layered Cloud Architecture Design – NIST Cloud Computing Reference Architecture – Public,

Private and Hybrid Clouds - **IaaS – PaaS – SaaS** – Architectural Design Challenges – Cloud Storage – Storage-as-a-Service – Advantages of Cloud Storage – Cloud Storage Providers – S3.

UNIT IV RESOURCE MANAGEMENT AND SECURITY IN CLOUD 10

Inter Cloud Resource Management – Resource Provisioning and Resource Provisioning Methods

– Global Exchange of Cloud Resources – Security Overview – Cloud Security Challenges – **Software-as-a-Service Security – Security Governance – Virtual Machine Security – IAM – Security Standards.**

UNIT V CLOUD TECHNOLOGIES AND ADVANCEMENTS 8

Hadoop – MapReduce – Virtual Box -- **Google App Engine** – Programming Environment for Google App Engine – Open Stack – Federation in the Cloud – Four Levels of Federation – Federated Services and Applications – Future of Federation.

TOTAL: 45 PERIODS**OUTCOMES:**

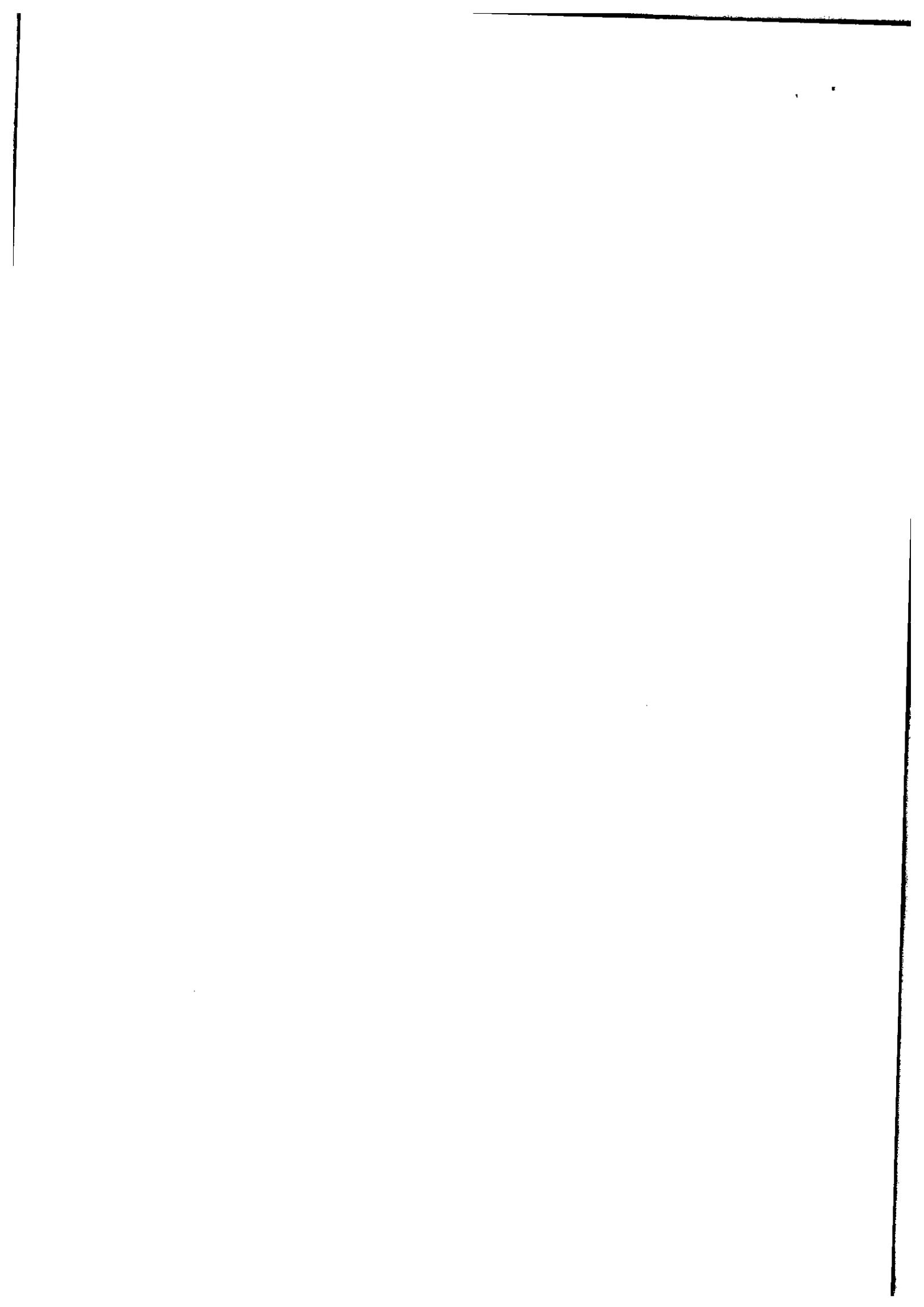
On Completion of the course, the students should be able to:

- Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
- Learn the key and enabling technologies that help in the development of cloud.
- Develop the ability to understand and use the architecture of compute and storage cloud service and delivery models.
- Explain the core issues of cloud computing such as resource management and security.
- Be able to install and use current cloud technologies.
- Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.



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TEXT BOOKS:

1. Kai Hwang, Geoffrey C. Fox, Jack G. Dongarra, "Distributed and Cloud Computing, From Parallel Processing to the Internet of Things", Morgan Kaufmann Publishers, 2012.
2. Rittinghouse, John W., and James F. Ransome, "Cloud Computing: Implementation, Management and Security", CRC Press, 2017.

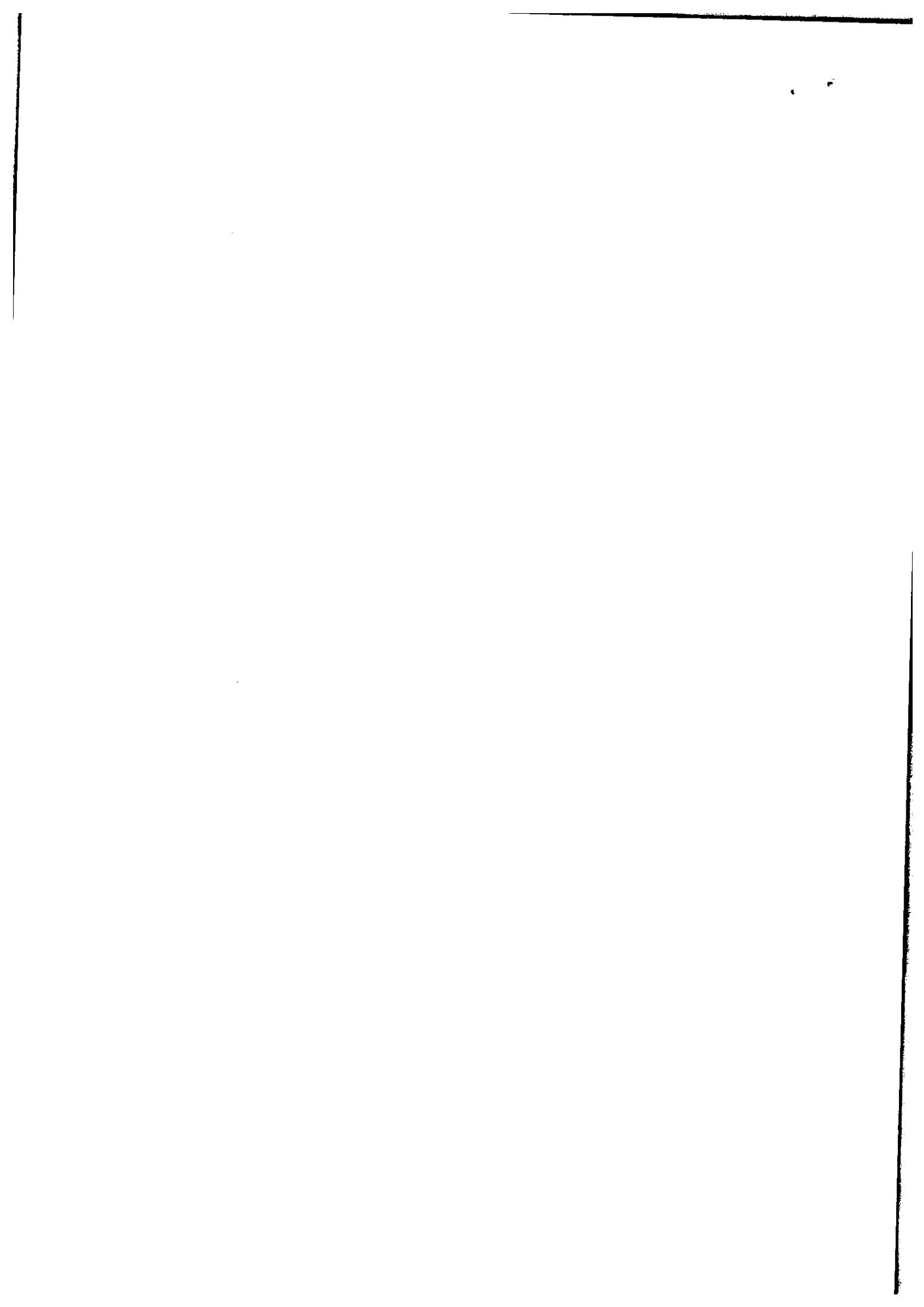
REFERENCES:

1. Rajkumar Buyya, Christian Vecchiola, S. ThamaraiSelvi, "Mastering Cloud Computing", Tata Mcgraw Hill, 2013.
2. Toby Velte, Anthony Velte, Robert Elsenpeter, "Cloud Computing - A Practical Approach", Tata Mcgraw Hill, 2009.
3. George Reese, "Cloud Application Architectures: Building Applications and Infrastructure in the Cloud: Transactional Systems for EC2 and Beyond (Theory in Practice)", O'Reilly, 2009.



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IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY USING FARMER'S PORTAL

A PROJECT REPORT

Submitted by

AFRAR AHAMED I (311818104002),

JAVID BASHA J (311818104018),

MOHAMED AKIL H (311819104022)

in partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

MOHAMED SATHAK A. J. COLLEGE OF ENGINEERING,

SIRUSERI CHENNAI – 603 103



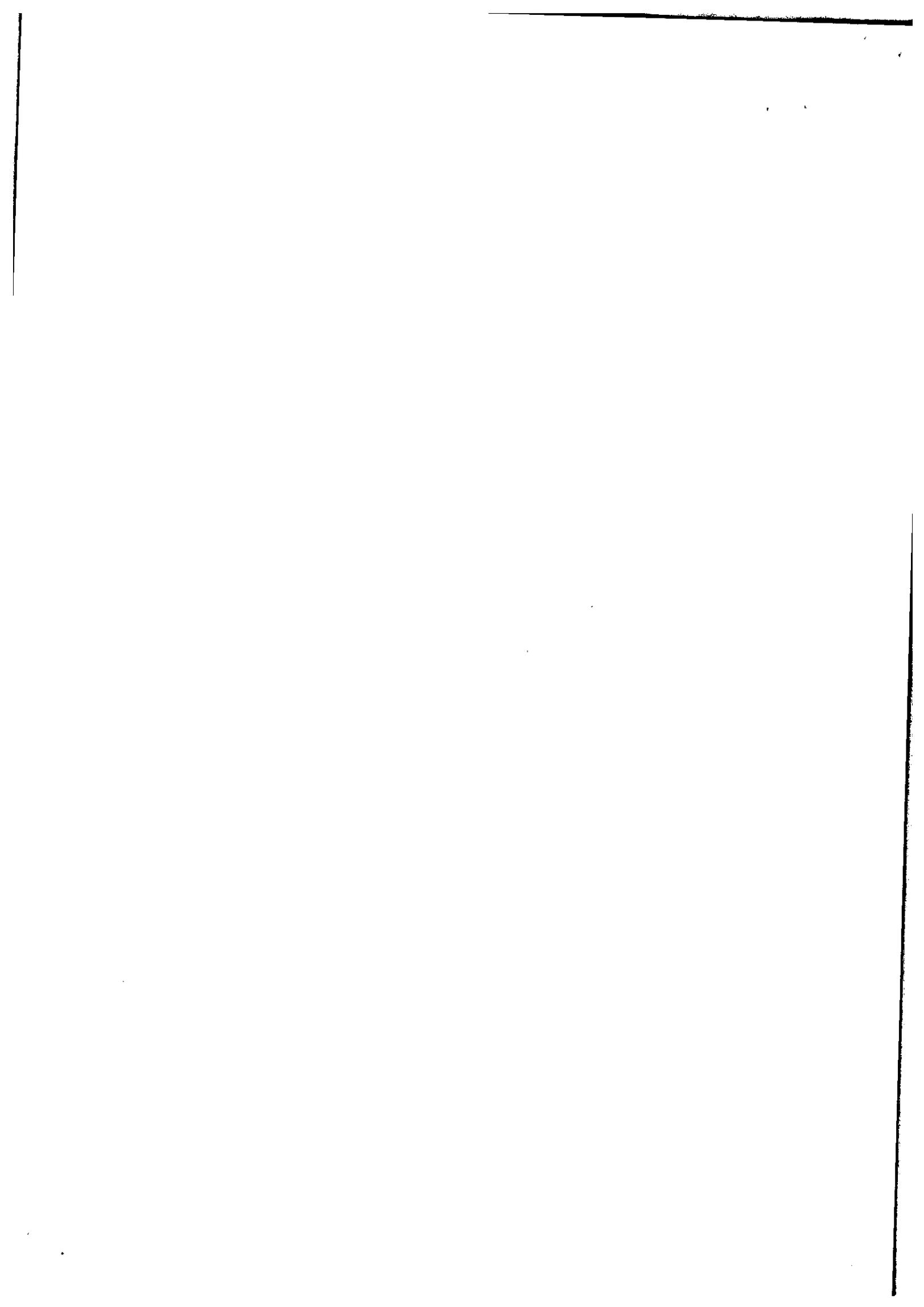
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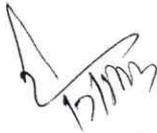
MAY 2023



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BONAFIDE CERTIFICATE

Certified that this project report “IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY USING FARMER’S PORTAL” is the bonafide work of AFRAR AHAMED I (311819104002), JAVID BASHA J (311819104018), MOHAMED AKIL H (311819104022) who carried out the project work under my supervision.



Mr.S.VIMALATHITHAN

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Mr.G PANDIAN

SUPERVISOR

Assistant Professor
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Project Viva-Voice held on 18/05/2023



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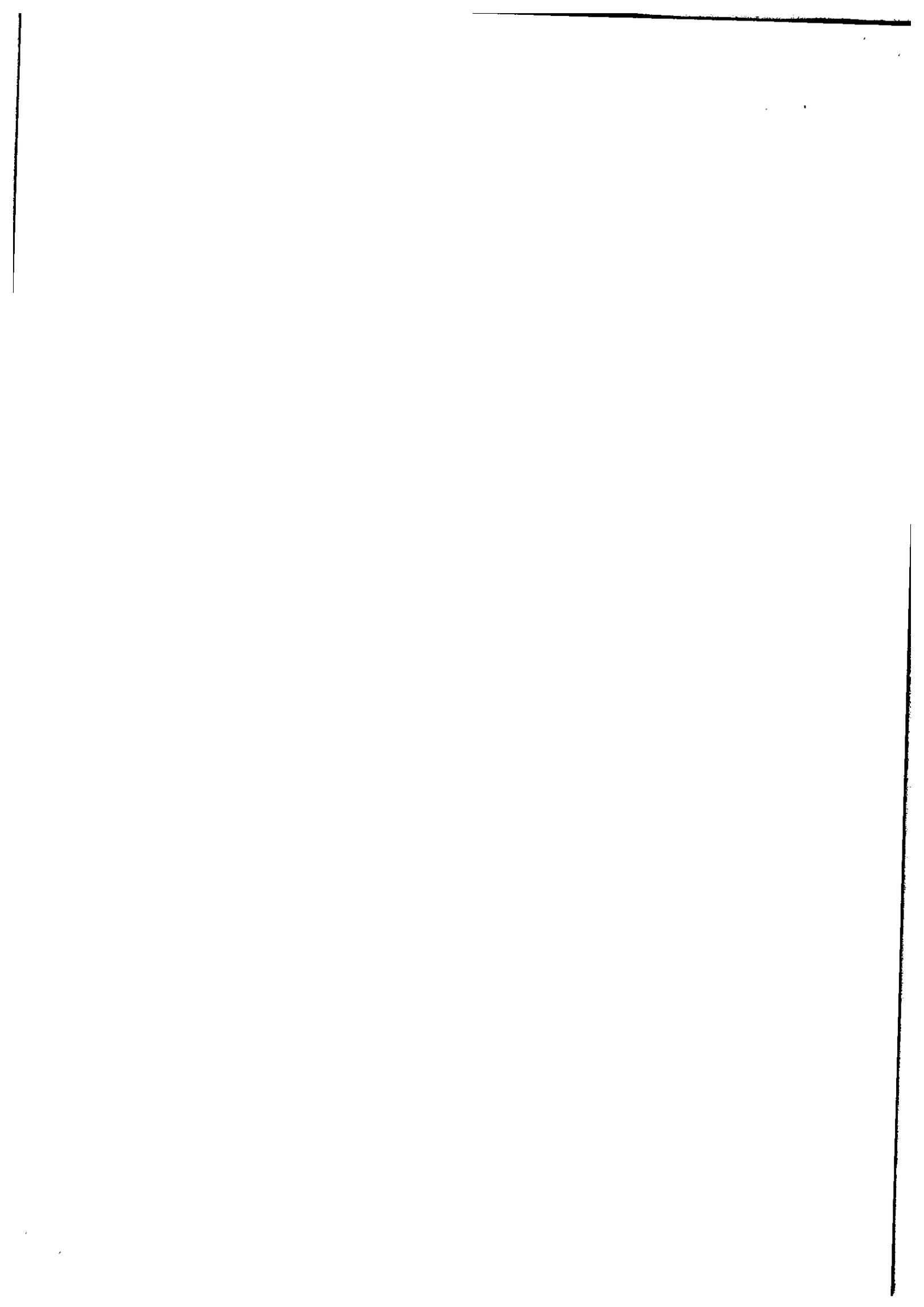


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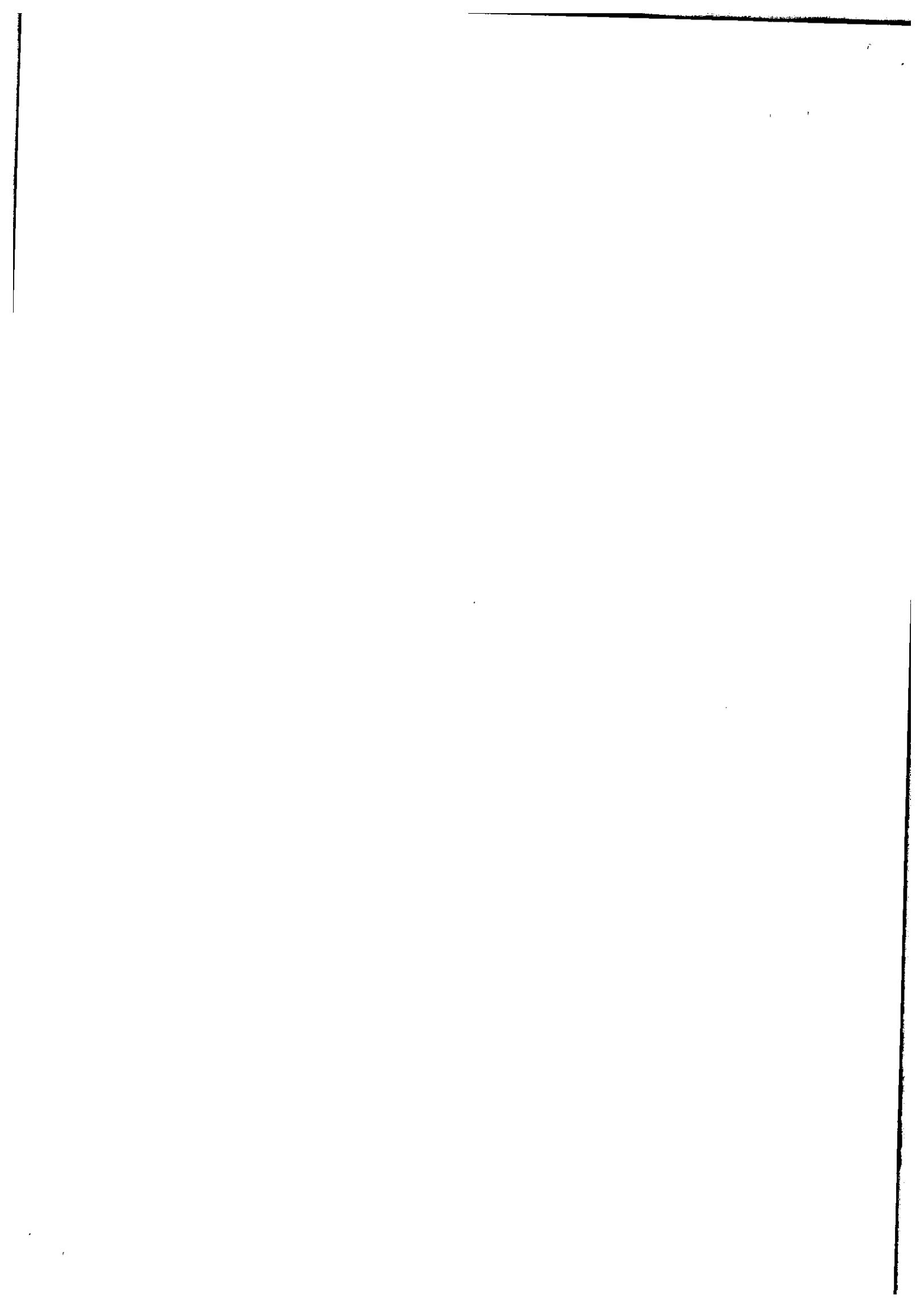


ABSTRACT

Blockchain is a method in which a confirmation of a transaction is kept by means of a crypto-currency. The record is maintained transversely, linking several computers in a peer to peer network. Contracts, transactions, and the records of them define the economic system of a country. They set boundaries and provide security to the assets. Considering the features of blockchain such as immutability and maintaining the footage of transaction details, this paper highlights the usage of blockchain technology with farmer's portal that keep the footage of selling and buying information of crops. The proposed solution uses the python as a programming language in integration with the blockchain system that will benefit the farmers or vendors and individuals by preserving the contract of trade. An interface for the farmers is designed using a python programming language in addition with blockchain technology, which is used to store the information related to seller, buyer, selling and buying an item and total value transacted.



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6. CONCLUSION

Blockchain Technology in the field of agriculture can bring a revolutionary enhancement in the area of maintaining farmers data securely, ensuring the quality of seed, monitoring of moisture content in the soil, data of crop yield and lastly demand and sale price of crops. In this work, a blockchain-based portal is proposed to deal with the issue of demand and sale price of crops which in result ensure crop security to farmers as well as to get fair price of the crop. For this, a portal is proposed on which a farmer can register and sell his crops, recording a transaction on a blockchain at a point when buyers commit to buy a farmer's crop. This transaction is capable of recording crop details, the price at which it is committed to buying and quantity of crop purchased. This immutable nature of blockchain technology will fortify farmers to get a legitimate price of crop and reduce the cost of operation for selling and buying crops when compared to traditional methods.



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OBJECTIVES:

- To understand Cryptography Theories, Algorithms and Systems.
- To understand necessary Approaches and Techniques to build protection mechanisms in order to secure computer networks.

UNIT I INTRODUCTION 9

Security trends - Legal, Ethical and Professional Aspects of Security, Need for Security at Multiple levels, Security Policies - Model of network security – Security attacks, services and mechanisms – OSI security architecture – Classical encryption techniques: substitution techniques, transposition techniques, steganography- Foundations of modern cryptography: perfect security – information theory – product cryptosystem – cryptanalysis.

UNIT II SYMMETRIC KEY CRYPTOGRAPHY 9

MATHEMATICS OF SYMMETRIC KEY CRYPTOGRAPHY: Algebraic structures - Modular arithmetic-Euclid's algorithm- Congruence and matrices - Groups, Rings, Fields- Finite fields- **SYMMETRIC KEY CIPHERS:** SDES – Block cipher Principles of DES – Strength of DES – Differential and linear cryptanalysis - Block cipher design principles – Block cipher mode of operation – Evaluation criteria for AES – Advanced Encryption Standard - RC4 – 78

Key distribution.

UNIT III PUBLIC KEY CRYPTOGRAPHY 9

MATHEMATICS OF ASYMMETRIC KEY CRYPTOGRAPHY: Primes – Primality Testing – Factorization – Euler's totient function, Fermat's and Euler's Theorem - Chinese Remainder Theorem – Exponentiation and logarithm - **ASYMMETRIC KEY CIPHERS:** RSA cryptosystem – Key distribution – Key management – Diffie Hellman key exchange - ElGamal cryptosystem – Elliptic curve arithmetic-Elliptic curve cryptography.

UNIT IV MESSAGE AUTHENTICATION AND INTEGRITY 9

Authentication requirement – Authentication function – MAC – Hash function – Security of hash function and MAC – **SHA –Digital signature and authentication protocols** – DSS- Entity Authentication: Biometrics, Passwords, Challenge Response protocols- Authentication applications - Kerberos, X.509

UNIT V SECURITY PRACTICE AND SYSTEM SECURITY 9

Electronic Mail security – PGP, S/MIME – IP security – Web Security - SYSTEM SECURITY: Intruders – Malicious software – viruses – Firewalls.

TOTAL 45 PERIODS**OUTCOMES:**

At the end of the course, the student should be able to:

- Understand the fundamentals of networks security, security architecture, threats and vulnerabilities
- Apply the different cryptographic operations of symmetric cryptographic algorithms
- Apply the different cryptographic operations of public key cryptography
- Apply the various Authentication schemes to simulate different applications.
- Understand various Security practices and System security standards

TEXT BOOK:

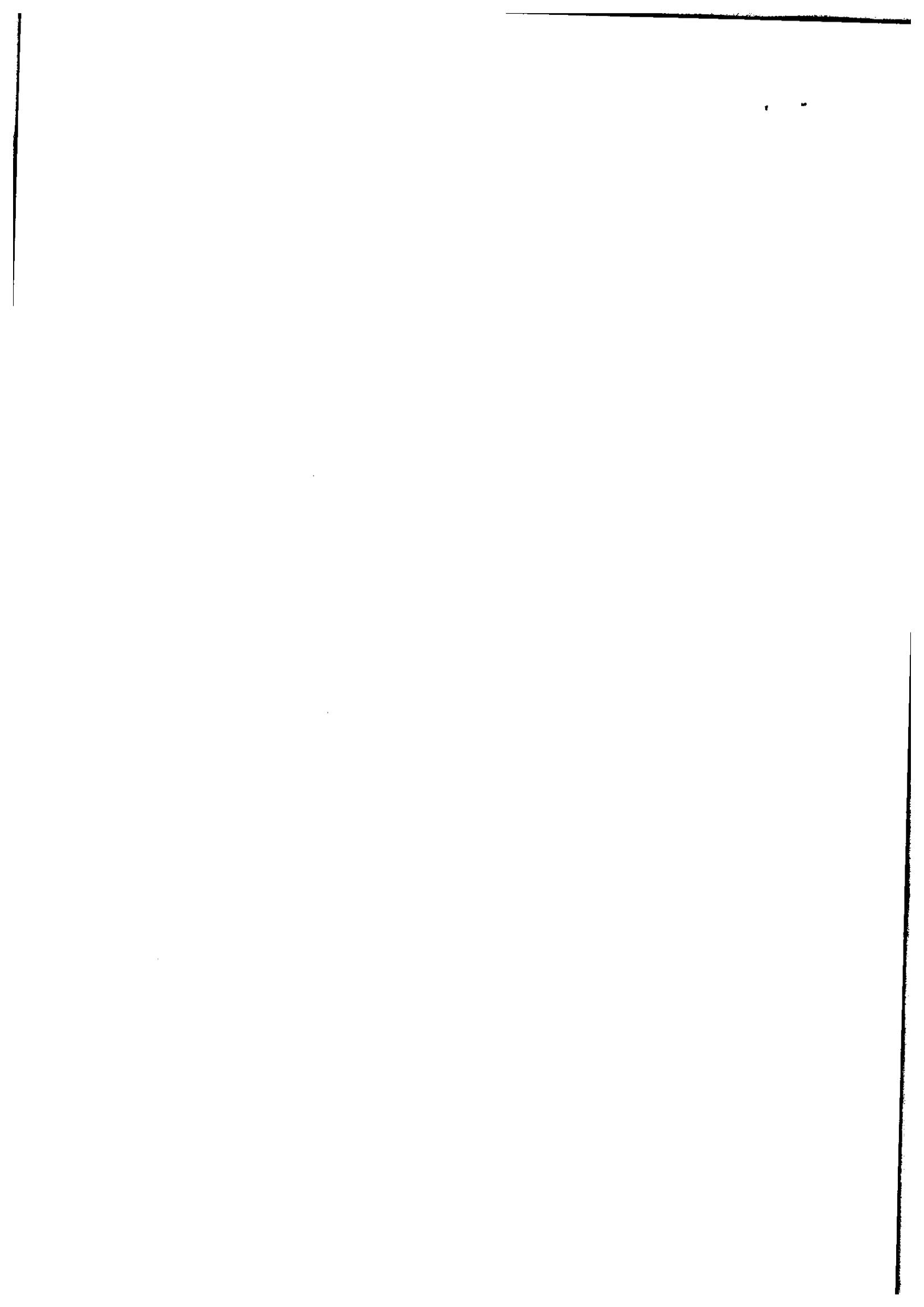
1. William Stallings, Cryptography and Network Security: Principles and Practice, PHI 3rd Edition, 2006.

REFERENCES:

1. C K Shyamala, N Harini and Dr. T R Padmanabhan: Cryptography and Network Security, Wiley India Pvt.Ltd
2. Behrouz A. Forouzan, Cryptography and Network Security, Tata McGraw Hill 2007.
3. Charlie Kaufman, Radia Perlman, and Mike Speciner, Network Security: PRIVATE Communication in a PUBLIC World, Prentice Hall, ISBN 0-13-046019-2


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**REAL TIME DEEP LEARNING BASED TECHNIQUES FOR
DETECTING PATHOLES**

A PROJECT REPORT

Submitted by

TAHIR JAMAL

311819104049

in partial fulfilment for the award of the degree of

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in

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MAY 2023



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BONAFIDE CERTIFICATE

Certified that this project report “Real Time Deep Learning Based Techniques for Detecting Patholes” is the bonafide work of **TAHIR JAMAL (311819104049)** who carried out the project under my supervision.

S. Vimalathithan
18/5/23

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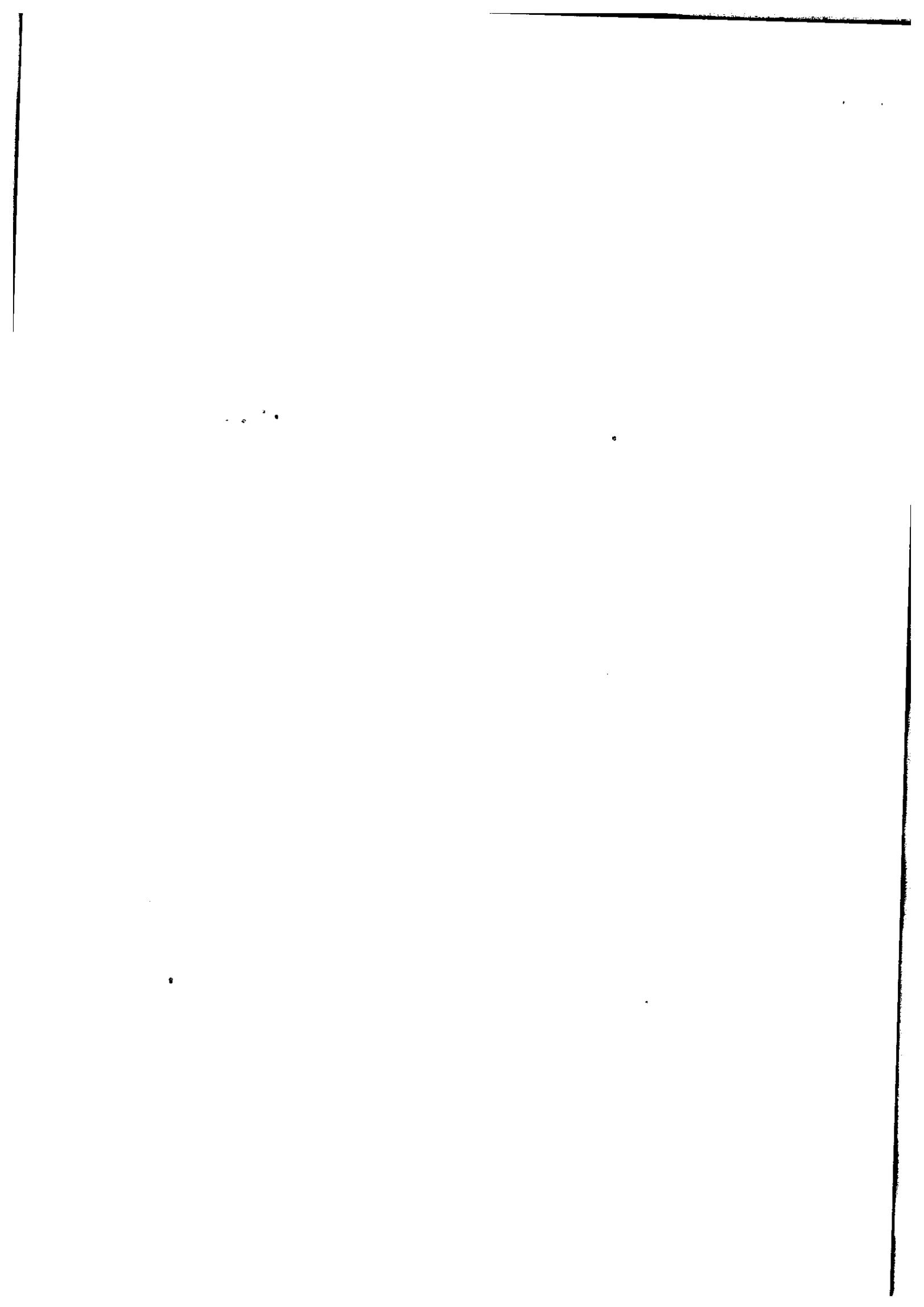
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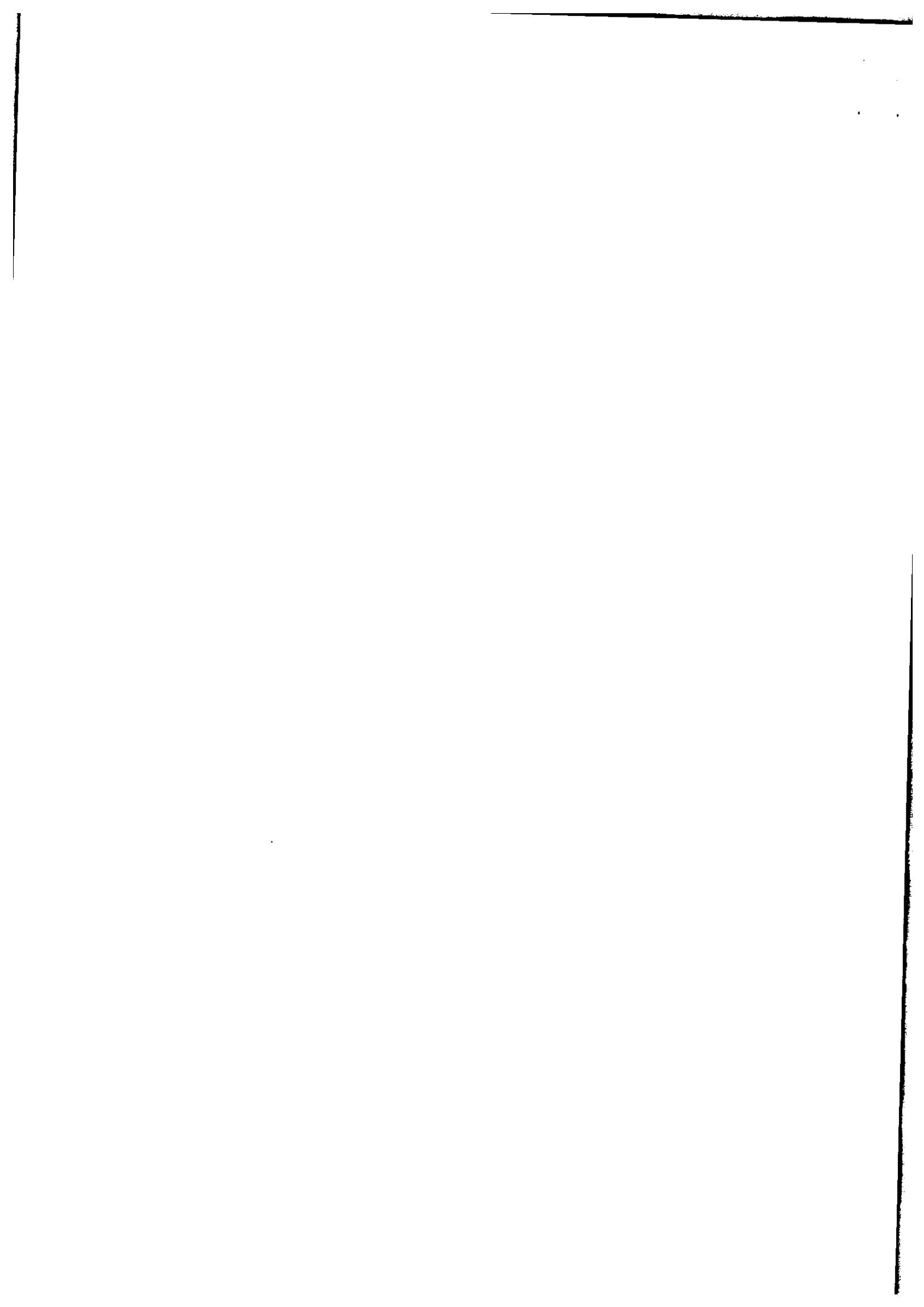
ABSTRACT

Humps and potholes are the foremost reasons for road accidents. It should be detected and informed to the other vehicle that is going to pass in that location leads to reduce accidents. To overcome this problem, in this paper, a novel road surface monitoring system is proposed for identifying the humps and potholes. The signals scattered from the ultrasonic sensor influenced to a large extent by the hump, and potholes of the road. Due to a reduction in the amplitude of the reflected signal, the above problem is hard to analyze. For real-time analysis, Kirchhoff's theory has used. To overcome the limitations of Kirchhoff's theory, Convolution Neural Network-based Deep Learning (CNN-DL) has proposed for detecting the pothole and humps on the road. The location of the pothole has measured by a global positioning system (GPS) and updates the information to the control room. To prove the validity of the proposed method for estimating the potholes on the road, two other benchmark methods, namely, Kirchhoff's theory, and k-nearest neighbor (KNN) are selected to validate the performance. The experiment results show that the CNN-DL is better than other methods for detecting pothole of the road at any kind.



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OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION

Introduction–Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents– Typical Intelligent Agents – Problem Solving Approach to Typical AI problems. 9

UNIT II PROBLEM SOLVING METHODS

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal Decisions in Games – Alpha - Beta Pruning - Stochastic Games 9

UNIT III KNOWLEDGE REPRESENTATION

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining-Backward Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information 9

UNIT IV SOFTWARE AGENTS

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems. 9

UNIT V APPLICATIONS

AI applications – Language Models – Information Retrieval- Information Extraction – Natural Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving 9

TOTAL :45 PERIODS**OUTCOMES:**

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

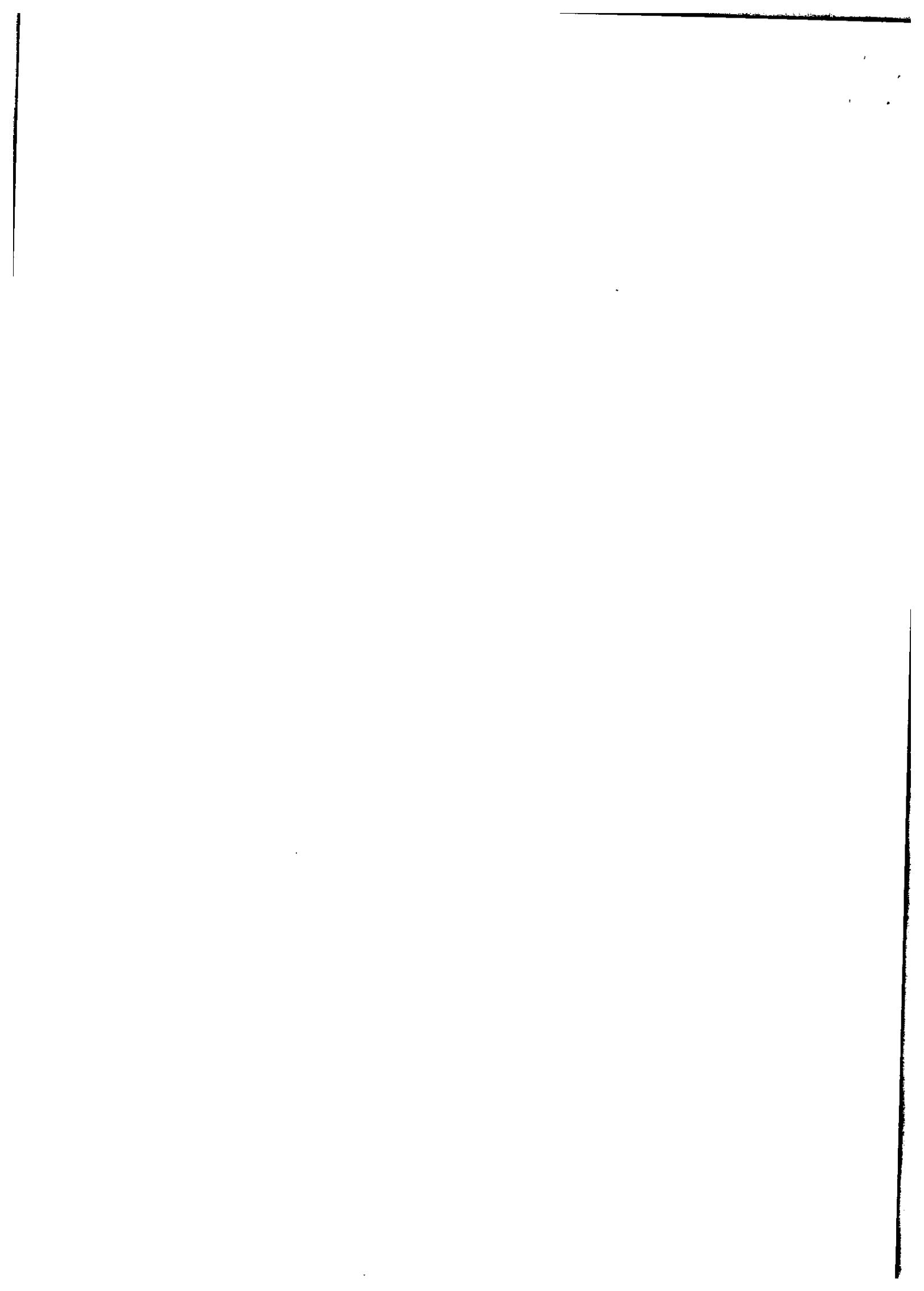
TEXT BOOKS:

1. S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2009.
2. I. Bratko, "Prolog: Programming for Artificial Intelligence", Fourth edition, Addison-Wesley Educational Publishers Inc., 2011.

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2. Nils J. Nilsson, "The Quest for Artificial Intelligence", Cambridge University Press, 2009.
3. William F. Clocksin and Christopher S. Mellish, "Programming in Prolog: Using the ISO Standard", Fifth Edition, Springer, 2003.
4. Gerhard Weiss, "Multi Agent Systems", Second Edition, MIT Press, 2013.
5. David L. Poole and Alan K. Mackworth, "Artificial Intelligence: Foundations of Computational Agents", Cambridge University Press, 2010.

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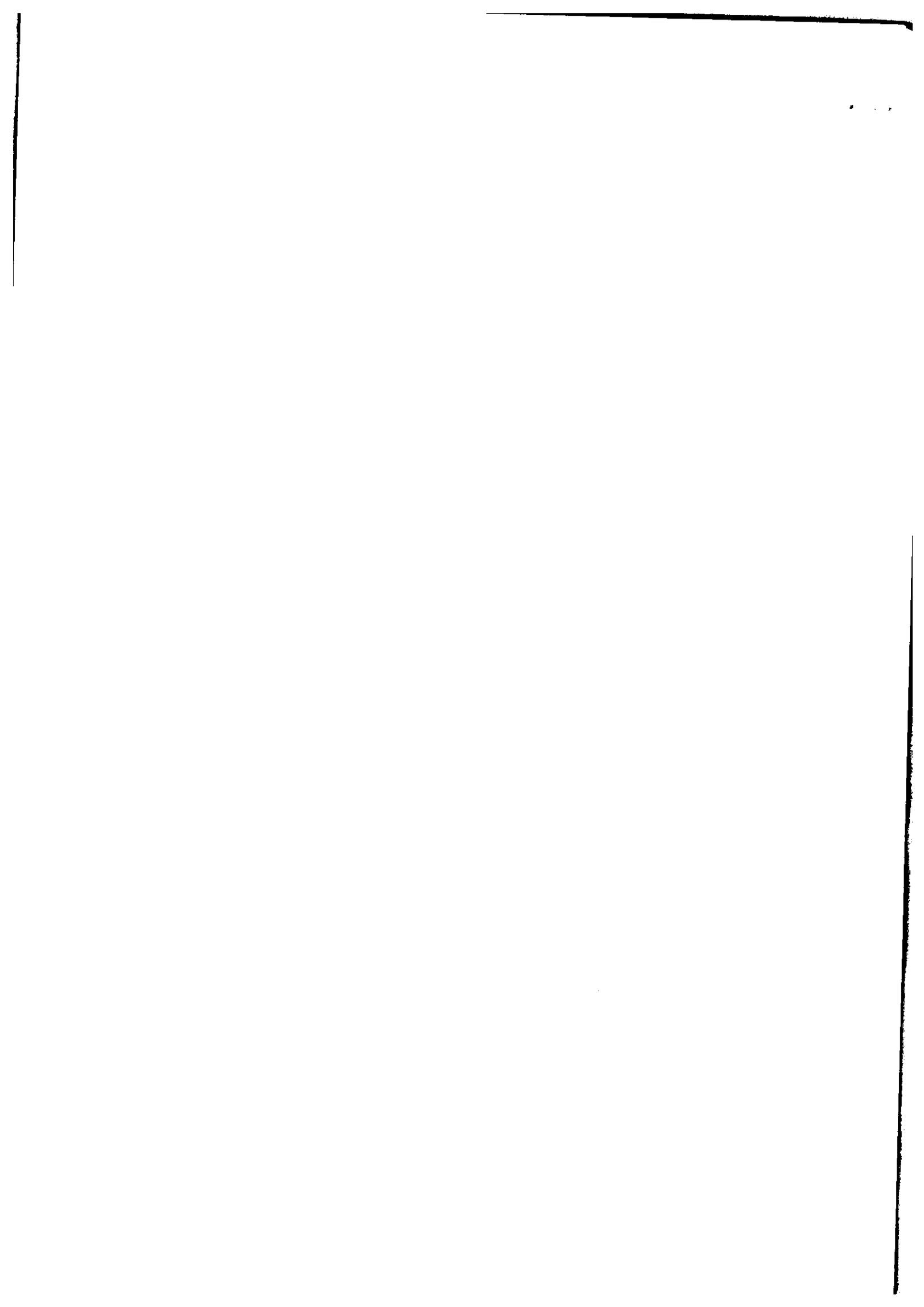


CONCLUSION

This work presented the state-of-the-art deep learning models (YOLO family and SSD-mobilenetv2) for real-time pothole detection leading towards the deployment on edge devices. Although, YOLOv5 showed the highest mAP@0.5 of 95% among other models but exhibits miss-classification and no detection potholes at long distances. Therefore, we concluded the YOLOv4 as the best-fit pothole detection model for accuracy and Tiny-YOLOv4 as the best-fit pothole detection model for real-time pothole detection with 90% detection accuracy and 31.76 FPS. The proposed approach can help road maintenance authorities to formulate rapid and optimized actions for road infrastructure repairs. A more sophisticated solution with the help of the global position system (GPS) can detect and point out the location of pavement failures. This work can contribute to self-driving applications and the automation industry. This work can further be extended to detect other pavement distresses, road depressions, classify roads as per quality, and depth estimation of potholes. The accuracy limitations can also be resolved in the future by further modification and extension in the real-time deployment.



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HOUSE PRICE PREDICTION MODEL USING MACHINE LEARNING

A PROJECT REPORT

Submitted by

MUHAMMED SHIBIL C V (311819104027),

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of

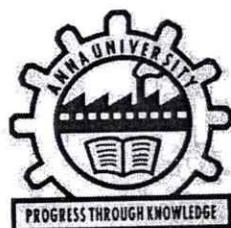
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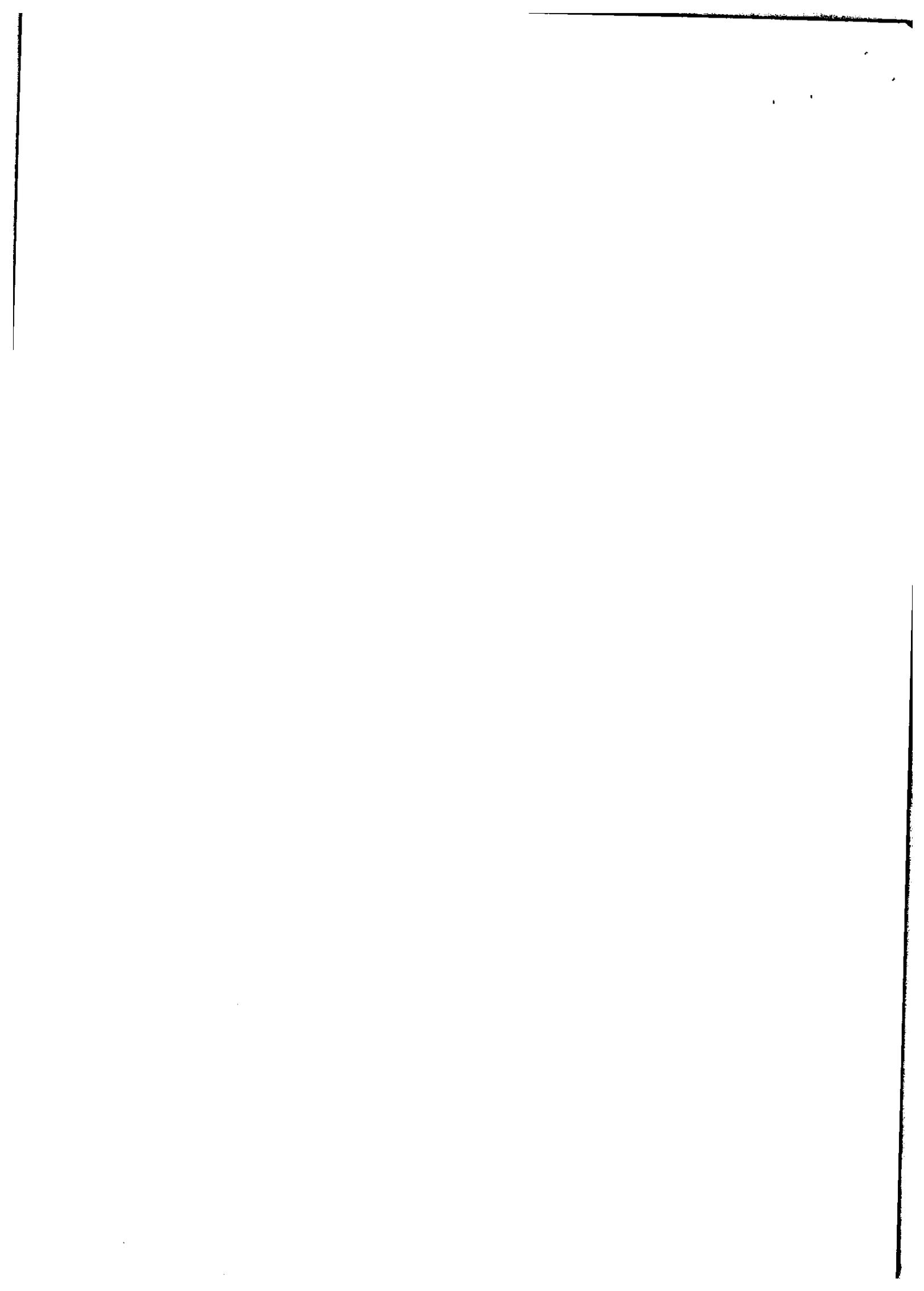
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ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report “**HOUSE PRICE PREDICTION MODEL USING MACHINE LEARNING**” is the bonafide work of “**MUHAMMED SHIBIL CV(311819104027), MUHAMMAD MUNSHID PP (311819104026), YASAR ARAFATH (311818104052)**” who carried out the project work under my supervision.



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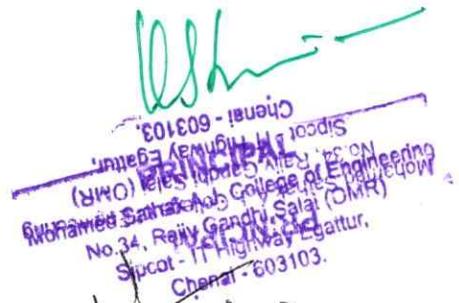
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Project Viva-Voice held on 18-05-2023

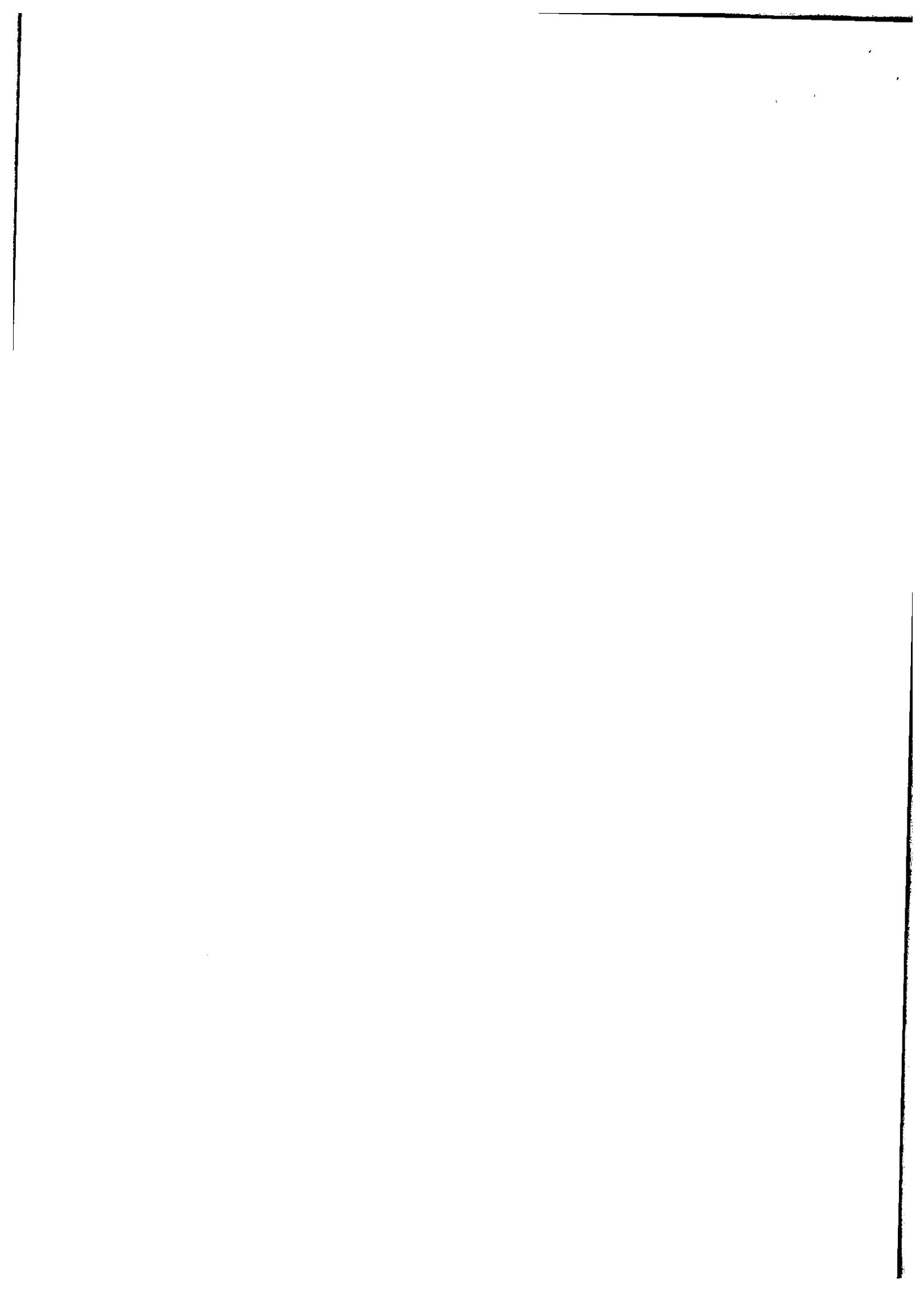


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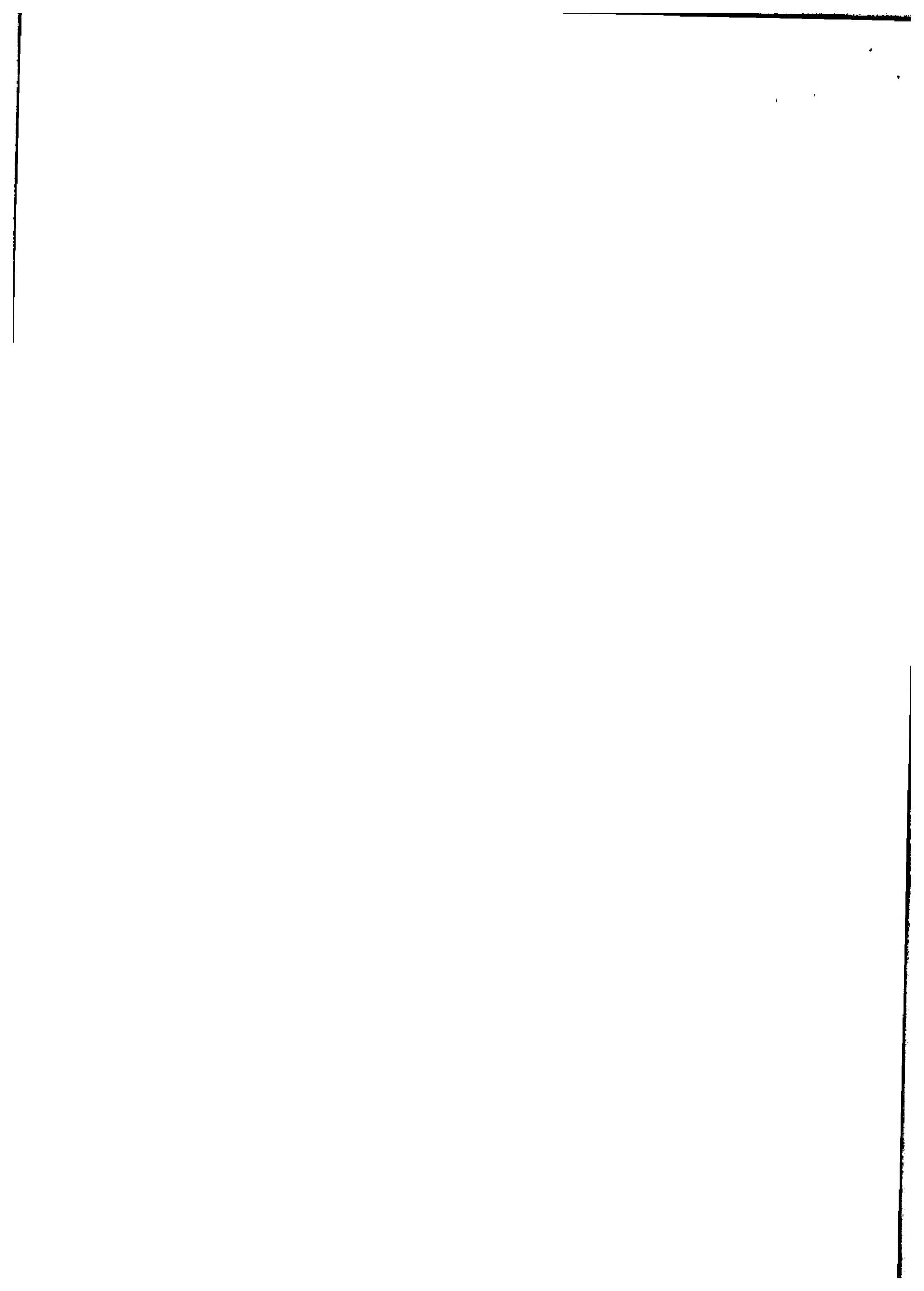


ABSTRACT

The real estate industry plays a pivotal role in this by providing the necessary data and context for developing an accurate house price prediction model. To develop a house price prediction model using machine learning techniques, the model utilizes a dataset consisting of various features such as location, size, number of bedrooms and bathrooms, amenities, and other factors that affect the value of a property. The model uses a combination of regression and classification algorithms to predict the price of a house accurately. The primary objective of this project is to provide a tool that can assist buyers, sellers, and real estate professionals in making informed decisions regarding the pricing of a property.

The model is trained on historical data and is designed to identify patterns and correlations between different features and house prices. The accuracy of the model is evaluated using various performance metrics, and the results are compared with other existing models. The project highlights the importance of data analysis and feature selection in developing an accurate house price prediction model. The study provides insights into the factors that contribute to the value of a property and can aid in identifying potential investment opportunities.

Overall, this serves as a valuable tool for anyone interested in the real estate market and can provide critical insights into the pricing of a property. The project incorporates a comprehensive data cleaning process to ensure the accuracy and quality of the dataset. Feature engineering techniques are also used to extract meaningful insights from the raw data. The model is deployed using a user-friendly interface to make it accessible to a wider audience. The study also discusses potential limitations of the model and identifies areas for future research. Overall, this project aims to provide a robust and reliable tool that can assist in the decision-making process related to the pricing of a property.



CHAPTER – 6

CONCLUSION

In conclusion, the house price prediction model is an essential tool in the real estate industry for estimating the value of a property. Through the use of machine learning techniques such as linear regression, we can accurately predict the price of a house based on various factors such as location, size, amenities, and features.

The model developed in this project, using the Ames Housing dataset, achieved a high level of accuracy with an R-squared value of 0.87. This indicates that the model can account for a significant portion of the variance in the dependent variable (sale price) and is a reliable tool for predicting house prices in the Ames, Iowa area.

Furthermore, the use of Jupyter Notebook and Python programming language made it easy to handle large datasets, perform data cleaning, and develop machine learning models. The HTML and CSS files were also useful in creating a user-friendly interface for displaying the model results.

Overall, the house price prediction model has the potential to benefit both homebuyers and sellers by providing accurate estimates of property values. It can also be used by real estate agents, financial institutions, and insurance companies to make informed decisions about financing, sales, and insurance policies. As the real estate market continues to evolve, the house price prediction model will remain a valuable tool for making data-driven decisions.


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OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION 9

Introduction–Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents–

Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

69

UNIT II PROBLEM SOLVING METHODS 9

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search

Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal

Decisions in Games – Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGE REPRESENTATION 9

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Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and

Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWARE AGENTS 9

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UNIT V APPLICATIONS 9

AI applications – Language Models – Information Retrieval- Information Extraction – Natural

Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving

TOTAL :45 PERIODS**OUTCOMES:**

Upon completion of the course, the students will be able to:

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- Design software agents to solve a problem
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5. David L. Poole and Alan K. Mackworth, "Artificial Intelligence: Foundations of Computational Agents", Cambridge University Press, 2010.

DATA ANALYTICS FOR VISUALIZATION OF CRIME DATA

A PROJECT REPORT

Submitted by

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in partial fulfilment for the award of the degree of

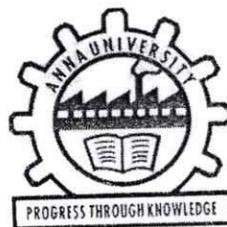
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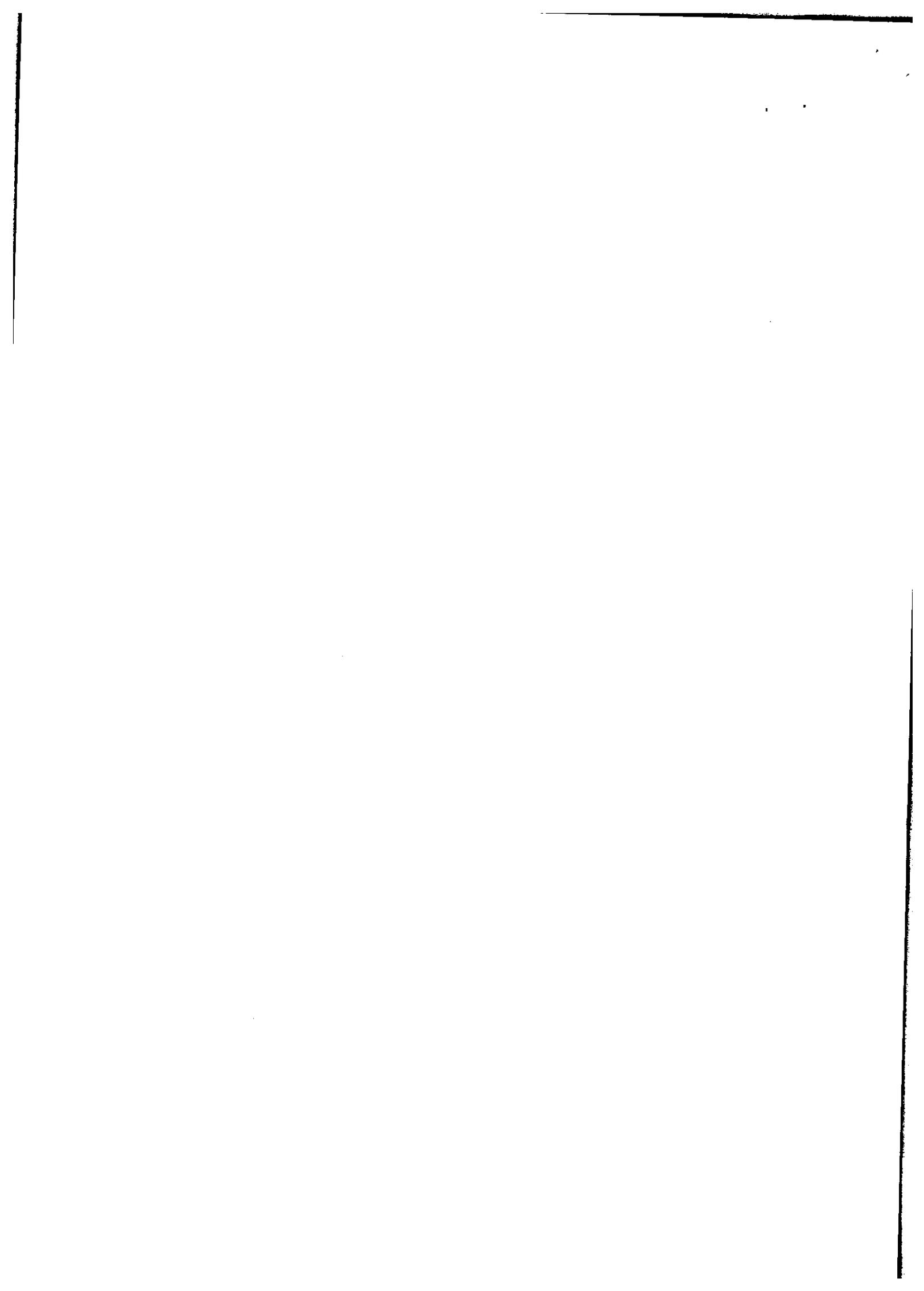


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MAY 2023



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BONAFIDE CERTIFICATE

Certified that this project report "DATA ANALYTICS FOR VISUALIZATION OF CRIME DATA" is the bonafide work of SHAHIDHA K (311819104043), PRATHIKSHA S (311819104035), VISHAL V (311819104051) who carried out the project work under my supervision.



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Project Viva-Voice held on 18/5/2023

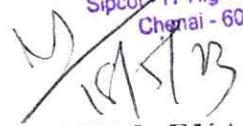


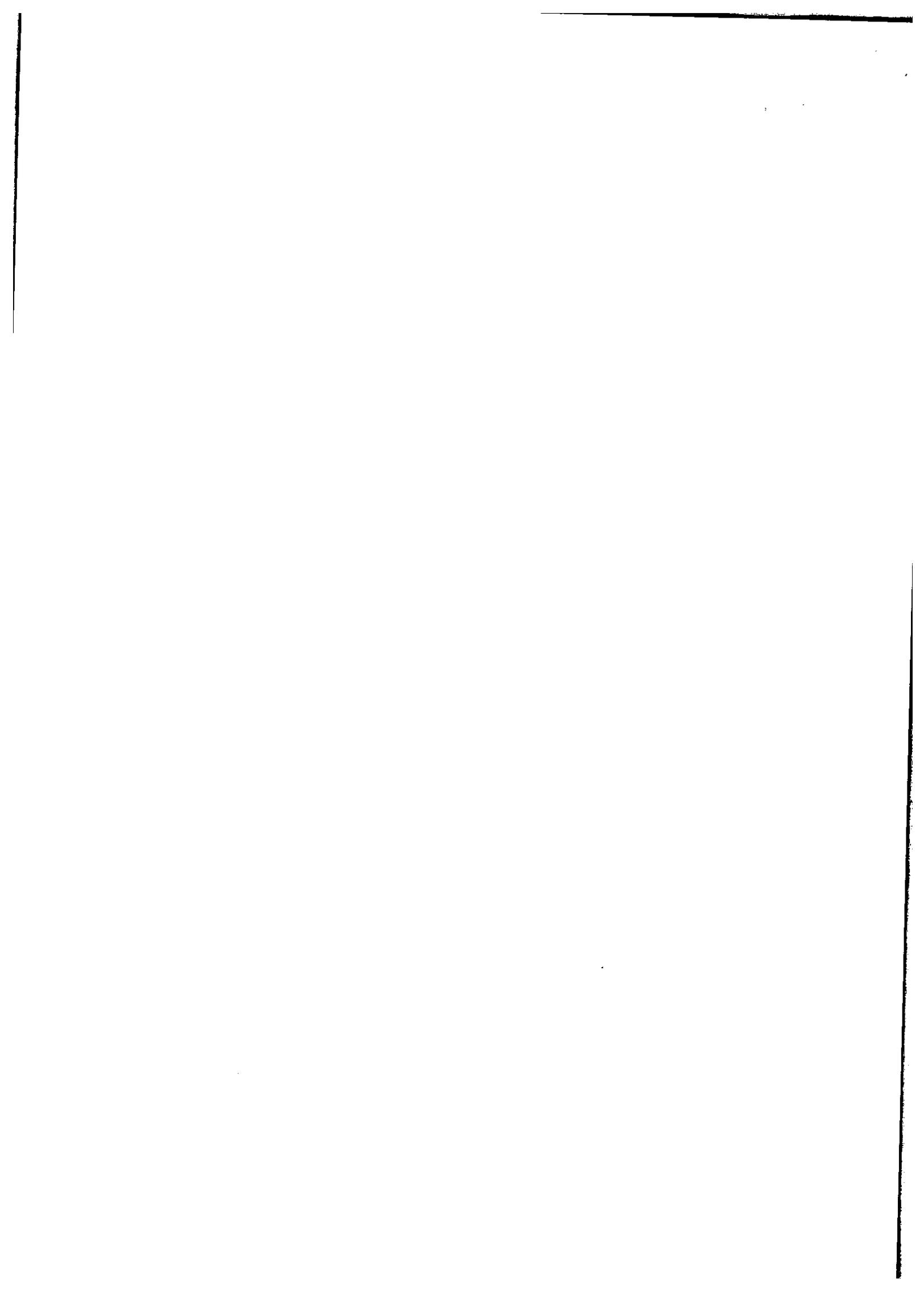
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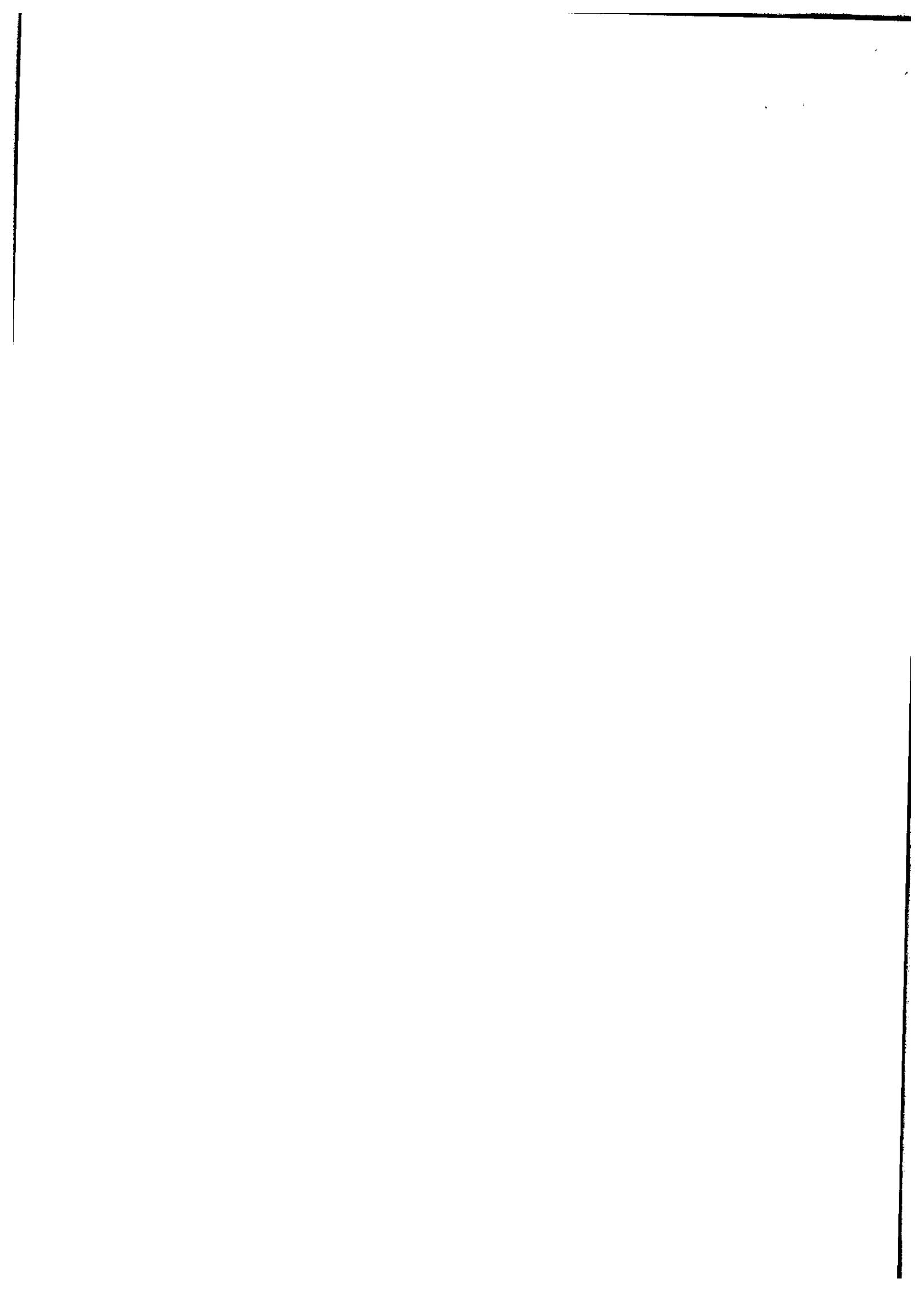


ABSTRACT

The use of data analytics has become increasingly important in the field of crime prevention and law enforcement. This paper presents a study on data analytics for visualization and trend forecasting of crime data. The study uses crime data collected from various sources and applies data visualization techniques to analyse and present the data in a more understandable and actionable format. The data visualization techniques used include bar charts, heat maps, and scatterplots, among others. These techniques help to identify patterns and trends in the data that would not be apparent in tabular form. Additionally, machine learning algorithms are applied to the data to forecast future trends in crime. The study shows that data analytics can provide valuable insights into crime patterns and trends that can be used to inform policy decisions and allocate resources more effectively. By using data visualization techniques, law enforcement agencies can identify crime hotspots, track crime trends, and implement strategies to prevent and combat crime. Overall, this study demonstrates the importance of data analytics and data visualization in the field of crime prevention and law enforcement. The findings suggest that data-driven approaches can help to create more effective and efficient crime prevention strategies, ultimately leading to safer communities.


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CHAPTER 7

CONCLUSION

7.1 CONCLUSION

In conclusion, data analytics and visualization techniques are critical for understanding and predicting crime trends, and can be used to develop effective crime prevention and mitigation strategies. The "Data Analytics for Visualization and Trends Forecasting of Crime Data" module provides learners with the knowledge and skills necessary to analyze and visualize crime data, and make data-driven predictions and forecasts. The module covers various aspects of crime data analysis, including data pre-processing, data visualization, statistical analysis, machine learning techniques, and time-series forecasting. The stepwise approach followed by the module makes it easy for learners to understand and apply the techniques covered. Functional test cases for the module can be used to test the accuracy and effectiveness of the various techniques used in the module, such as data cleaning, visualization, and forecasting. Black box test cases can be used to test the input data validation, performance, and output data accuracy. Overall, the "Data Analytics for Visualization and Trends Forecasting of Crime Data" module is a valuable resource for anyone interested in understanding and predicting crime trends, and can be used to develop effective crime prevention and mitigation strategies.



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OBJECTIVES:

- To know the fundamental concepts of big data and analytics.
- To explore tools and practices for working with big data
- To learn about stream computing.
- To know about the research that requires the integration of large amounts of data.

UNIT I INTRODUCTION TO BIG DATA 9

Evolution of Big data - Best Practices for Big data Analytics - Big data characteristics - Validating

- The Promotion of the Value of Big Data - Big Data Use Cases- Characteristics of Big Data Applications - Perception and Quantification of Value -Understanding Big Data Storage - A General Overview of High-Performance Architecture - HDFS - MapReduce and YARN - Map

Reduce Programming Model

UNIT II CLUSTERING AND CLASSIFICATION 9

Advanced Analytical Theory and Methods: Overview of Clustering - K-means - Use Cases - Overview of the Method - Determining the Number of Clusters - Diagnostics - Reasons to Choose and Cautions - Classification: Decision Trees - Overview of a Decision Tree - The General Algorithm - Decision Tree Algorithms - Evaluating a Decision Tree - Decision Trees in

R - Naïve Bayes - Bayes' Theorem - Naïve Bayes Classifier.

90

UNIT III ASSOCIATION AND RECOMMENDATION SYSTEM 9

Advanced Analytical Theory and Methods: Association Rules - Overview - Apriori Algorithm -

Evaluation of Candidate Rules - Applications of Association Rules - Finding Association & finding

similarity - Recommendation System: Collaborative Recommendation- Content Based Recommendation - Knowledge Based Recommendation- Hybrid Recommendation Approaches.

UNIT IV STREAM MEMORY 9

Introduction to Streams Concepts – Stream Data Model and Architecture - Stream Computing,

Sampling Data in a Stream – Filtering Streams – Counting Distinct Elements in a Stream – Estimating moments – Counting oneness in a Window – Decaying Window – Real time Analytics

Platform(RTAP) applications - Case Studies - Real Time Sentiment Analysis, Stock Market Predictions. Using Graph Analytics for Big Data: Graph Analytics

UNIT V NOSQL DATA MANAGEMENT FOR BIG DATA AND VISUALIZATION 9

NoSQL Databases : Schema-less Models”: Increasing Flexibility for Data Manipulation-Key Value Stores- Document Stores - Tabular Stores - Object Data Stores - Graph Databases Hive - Sharding -- Hbase – Analyzing big data with twitter - Big data for E-Commerce Big data for blogs

- Review of Basic Data Analytic Methods using R.

TOTAL: 45 PERIODS**OUTCOMES:**

Upon completion of the course, the students will be able to:

- Work with big data tools and its analysis techniques


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- Analyze data by utilizing clustering and classification algorithms
- Learn and apply different mining algorithms and recommendation systems for large volumes of data
- Perform analytics on data streams
- Learn NoSQL databases and management.

TEXT BOOKS:

1. Anand Rajaraman and Jeffrey David Ullman, "Mining of Massive Datasets", Cambridge University Press, 2012.
2. David Loshin, "Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph", Morgan Kaufmann/El sevier Publishers, 2013.

REFERENCES:

1. EMC Education Services, "Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data", Wiley publishers, 2015.
2. Bart Baesens, "Analytics in a Big Data World: The Essential Guide to Data Science and its Applications", Wiley Publishers, 2015.
3. Dietmar Jannach and Markus Zanker, "Recommender Systems: An Introduction", Cambridge University Press, 2010.
4. Kim H. Pries and Robert Dunnigan, "Big Data Analytics: A Practical Guide for Managers", CRC Press, 2015.
5. Jimmy Lin and Chris Dyer, "Data-Intensive Text Processing with MapReduce", Synthesis Lectures on Human Language Technologies, Vol. 3, No. 1, Pages 1-177, Morgan Claypool publishers, 2010.

**REMOTE HEART RATE AND HEALTH MONITORING
USING IOT**

A PROJECT REPORT

Submitted by

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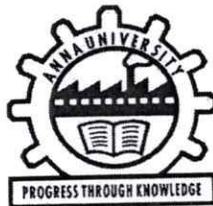
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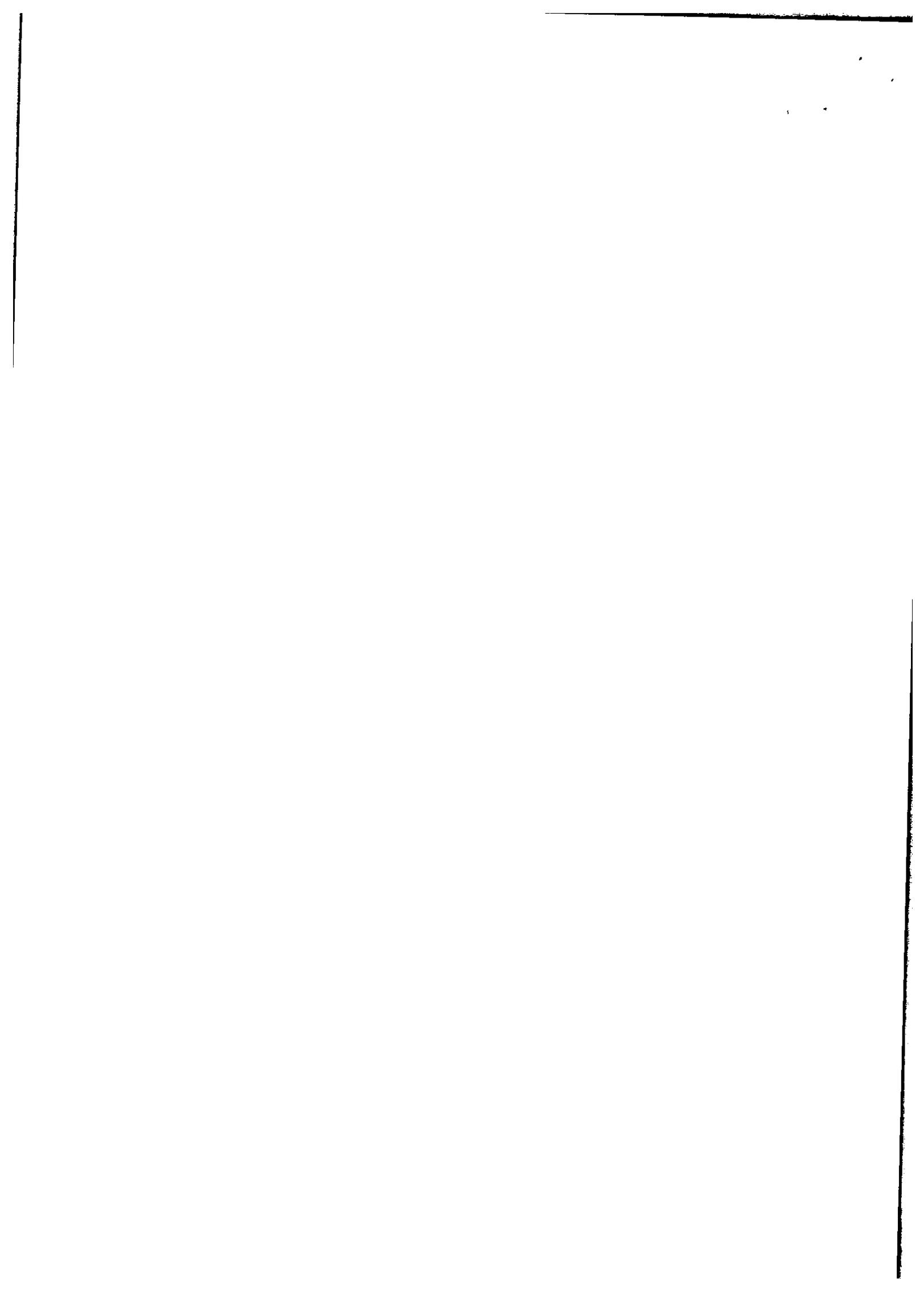
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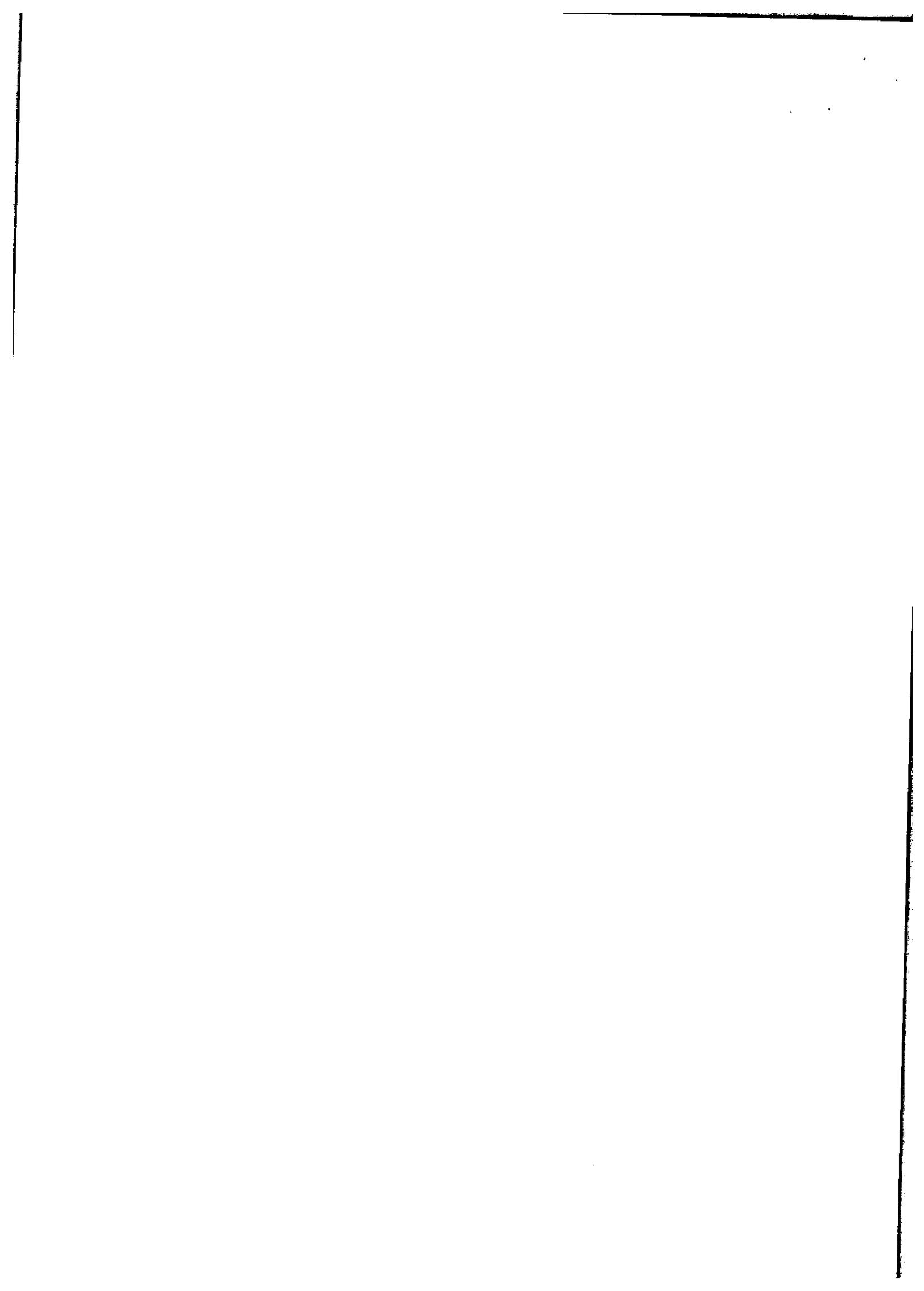


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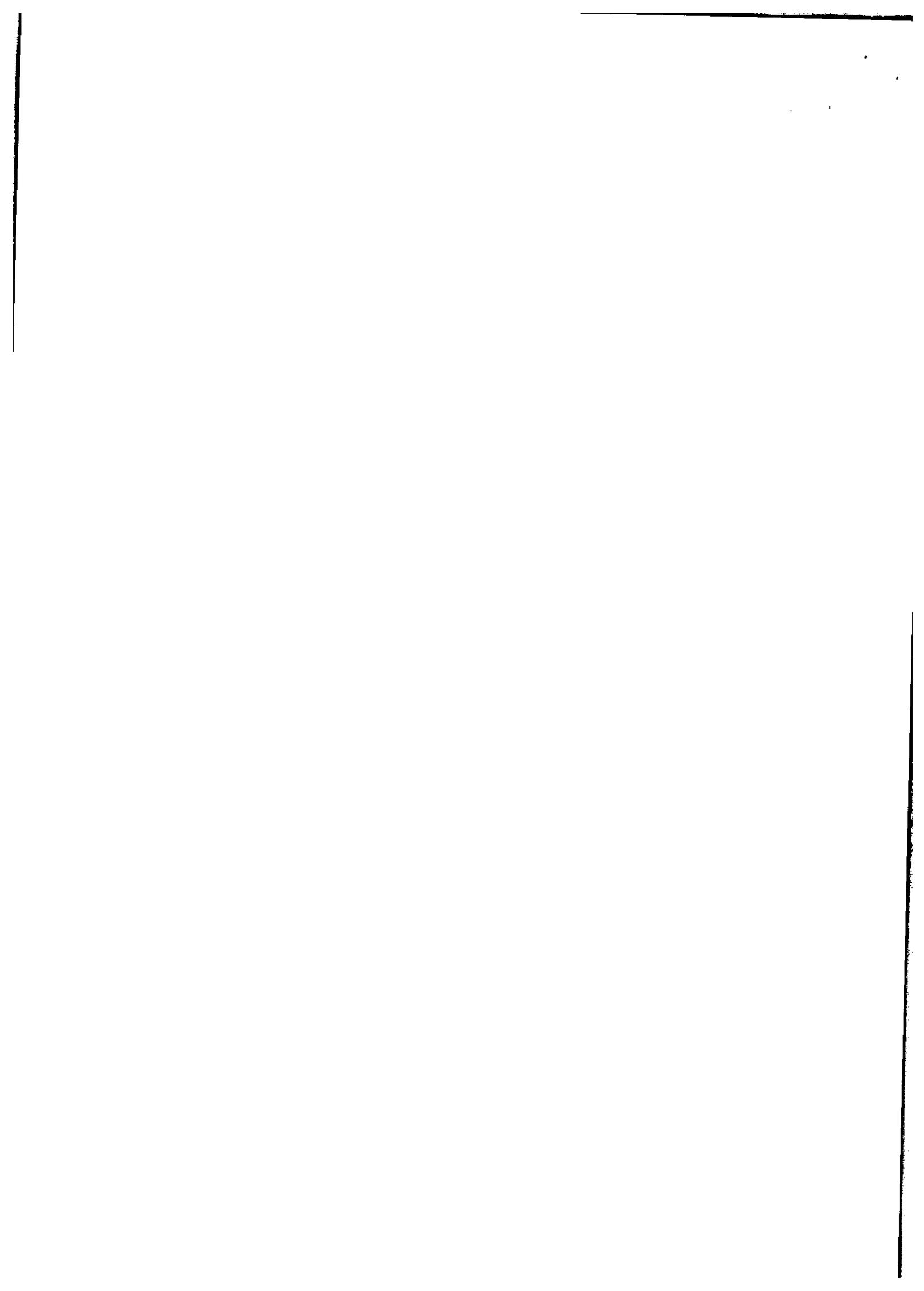


ABSTRACT

This project focuses on the development of a remote heart rate and temperature monitoring system using IoT (Internet of Things) technology. The system allows individuals to conveniently and remotely monitor their vital signs, providing real-time feedback and facilitating proactive healthcare management. Wearable devices equipped with sensors are used to capture heart rate and temperature data, which is then transmitted wirelessly to a centralized hub. The hub, connected to the internet, relays the data to a cloud-based platform for further analysis and visualization. The integration of IoT technology enables users and healthcare professionals to access and monitor the data from anywhere, promoting self-awareness and facilitating timely interventions. This system has the potential to enhance healthcare management, improve patient outcomes, and empower individuals to take an active role in maintaining their health.



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CHAPTER 7

7.1 CONCLUSION

The results obtained from different sensor devices will be compared and analyzed in detail. The values are recorded using sensors and processed using microcontroller. For emergency send the alert signal to doctor. This system is low cost, self-monitoring device and used in remote areas efficiently.

7.2 FUTURE SCOPE OF EXPANSION

The project on Remote Heart Rate and Health Monitoring System using IoT has promising future prospects. Key areas for future development include advanced analytics, integration with wearable devices, expansion of monitored health parameters, telemedicine integration, user-friendly mobile application, and scalability for wider deployment. These enhancements can enable personalized health insights, seamless user experience, comprehensive health assessment, remote consultations, improved accessibility, and wider adoption of the system.


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OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION 9

Introduction–Definition - Future of Artificial Intelligence – Characteristics of Intelligent Agents–

Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

69

UNIT II PROBLEM SOLVING METHODS 9

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search

Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal

Decisions in Games – Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGE REPRESENTATION 9

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining- Backward

Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and

Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWARE AGENTS 9

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS 9

AI applications – Language Models – Information Retrieval- Information Extraction – Natural

Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving

TOTAL :45 PERIODS**OUTCOMES:**

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

TEXT BOOKS:

1 S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2009.

2 I. Bratko, "Prolog: Programming for Artificial Intelligence", Fourth edition, Addison-Wesley


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Educational Publishers Inc., 2011.

REFERENCES:

1. M. Tim Jones, "Artificial Intelligence: A Systems Approach(Computer Science)", Jones and Bartlett Publishers, Inc.; First Edition, 2008
2. Nils J. Nilsson, "The Quest for Artificial Intelligence", Cambridge University Press, 2009.
3. William F. Clocksin and Christopher S. Mellish," Programming in Prolog: Using the ISO Standard", Fifth Edition, Springer, 2003.
4. Gerhard Weiss, "Multi Agent Systems", Second Edition, MIT Press, 2013.
5. David L. Poole and Alan K. Mackworth, "Artificial Intelligence: Foundations of Computational Agents", Cambridge University Press, 2010.

OBJECTIVES:

- To understand the Architecture of 8086 microprocessor.
- To learn the design aspects of I/O and Memory Interfacing circuits.
- To interface microprocessors with supporting chips.
- To study the Architecture of 8051 microcontroller.
- To design a microcontroller based system

UNIT I THE 8086 MICROPROCESSOR 9

Introduction to 8086 – Microprocessor architecture – Addressing modes - Instruction set and assembler directives – Assembly language programming – Modular Programming - Linking and

Relocation - Stacks - Procedures – Macros – Interrupts and interrupt service routines – Byte and

String Manipulation.

UNIT II 8086 SYSTEM BUS STRUCTURE 9

8086 signals – Basic configurations – System bus timing – System design using 8086 – I/O programming – Introduction to Multiprogramming – System Bus Structure – Multiprocessor configurations – Coprocessor, Closely coupled and loosely Coupled configurations – Introduction

to advanced processors.

UNIT III I/O INTERFACING 9

Memory Interfacing and I/O interfacing - Parallel communication interface – Serial communication

interface – D/A and A/D Interface - Timer – Keyboard /display controller – Interrupt controller –

DMA controller – Programming and applications Case studies: Traffic Light control, LED display ,

LCD display, Keyboard display interface and Alarm Controller.

UNIT IV MICROCONTROLLER 9

Architecture of 8051 – Special Function Registers(SFRs) - I/O Pins Ports and Circuits - Instruction

set - Addressing modes - Assembly language programming.

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UNIT V INTERFACING MICROCONTROLLER 9

Programming 8051 Timers - Serial Port Programming - Interrupts Programming – LCD & Keyboard Interfacing - ADC, DAC & Sensor Interfacing - External Memory Interface- Stepper

Motor and Waveform generation - Comparison of Microprocessor, Microcontroller, PIC and ARM

processors

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the students should be able to:

- Understand and execute programs based on 8086 microprocessor.
- Design Memory Interfacing circuits.
- Design and interface I/O circuits.
- Design and implement 8051 microcontroller based systems.

TEXT BOOKS:

1. Yu-Cheng Liu, Glenn A.Gibson, “Microcomputer Systems: The 8086 / 8088 Family -


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Architecture, Programming and Design”, Second Edition, Prentice Hall of India, 2007.

(UNIT I- III)

2. Mohamed Ali Mazidi, Janice Gillispie Mazidi, Rolin McKinlay, “The 8051 Microcontroller and

Embedded Systems: Using Assembly and C”, Second Edition, Pearson education, 2011.

(UNIT IV-V)

REFERENCES:

1. Douglas V.Hall, “Microprocessors and Interfacing, Programming and Hardware”,TMH,2012

2. A.K.Ray,K.M.Bhurchandi,”Advanced Microprocessors and Peripherals “3rd edition, Tata McGrawHill,2012

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DIGITAL IMAGE PROCESSING

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OBJECTIVES:

- To become familiar with digital image fundamentals
- To get exposed to simple image enhancement techniques in Spatial and Frequency domain.
- To learn concepts of degradation function and restoration techniques.
- To study the image segmentation and representation techniques.
- To become familiar with image compression and recognition methods

CSF

FRUIT QUALITY DETECTION USING MACHINE LEARNING TECHNIQUE

A PROJECT REPORT

Submitted by

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EXTERNAL EXAMINER

ABSTRACT

Machine learning techniques are now widely used to determine the quality of the fruit. Image processing is often the first step in obtaining fruit quality. The process begins with photographing the fruit from internet or camera then, the image is transferred to a processing phase where we can extract the characteristics of the fruit such as shape, size and color. These processes are performed using image processing. It helps to identify and compare fruit shape, size and color with trained data sets. This is done during training and testing. A variety of methods for automatic fruit classification are developed. The Artificial Neural Network helps to distinguish fruit based on quality such as good, medium and rotten fruit. The current system can distinguish good and rotten fruit with 87.4% accuracy but our proposed system is able to classify fruit good, ripe and rotten accuracy with 94.12% accuracy.

The process of fruit ripening improves the edibility, taste, desirability, the texture, color, and consistency of the fruits. Ethylene is released to ripen the fruit. This happens naturally when the fruit absorbs ethylene gas that makes the fruit ripen and can be artificially achieved with certain chemical substances to speed up the process. The fruit ripening, however, can be accelerated by using chemical substances like ethylene, ethephon one, and Calcium Carbide (CaC_2 , respectively) by artificial ripening. Banana is a fruit which is consumed all over the world. Thus, there is a demand for the supply of bananas


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CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

Haricot bean is a commercial commodity that plays a major role in earning foreign currency among export commodities of Ethiopia. Countries including Ethiopia produce haricot bean for both domestic and export consumptions. Even if the experts are highly skilled, they may get tired and exposed to bias. As far as the researcher's knowledge is concerned no effort has been made by research to support the grading process of Ethiopian haricot bean. In this study, an attempt has been made to construct a model for the classification and grading of Ethiopian haricot bean. The research follows experimental research methodology and techniques. On this phase of experimental test the researcher use images of haricot bean.

Once the image of haricot beans was captured median filtering techniques is used to reduce the effect of noise in the image. After the noise was removed the researcher try to apply binarization to convert to binary image, which makes easy image segmentation into sub-regions by watershed segmentation algorithm. Once the segmentation process completed, feature extraction is done to represent the image. This process is done via convolutional neural network (CNN). Which is a well-defined and good image classifier.to classify grade of haricot beans are by using add-16 andfc1000 as compression on classification.

Experimental result shows that the model constructed in this study registers a promising result of

% accuracy. From the result we have conclude that the dataset which is noise filtered


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OBJECTIVES:

- To understand the need for machine learning for various problem solving
- To study the various supervised, semi-supervised and unsupervised learning algorithms in machine learning
- To understand the latest trends in machine learning
- To design appropriate machine learning algorithms for problem solving

UNIT I INTRODUCTION 9

Learning Problems – Perspectives and Issues – Concept Learning – Version Spaces and Candidate Eliminations – Inductive bias – Decision Tree learning – Representation – Algorithm – Heuristic Space Search.

UNIT II NEURAL NETWORKS AND GENETIC ALGORITHMS 9

Neural Network Representation – Problems – Perceptrons – Multilayer Networks and Back Propagation Algorithms – Advanced Topics – Genetic Algorithms – Hypothesis Space Search – Genetic Programming – Models of Evaluation and Learning.

UNIT III BAYESIAN AND COMPUTATIONAL LEARNING 9

Bayes Theorem – Concept Learning – Maximum Likelihood – Minimum Description Length Principle – Bayes Optimal Classifier – Gibbs Algorithm – Naïve Bayes Classifier – Bayesian Belief Network – EM Algorithm – Probability Learning – Sample Complexity – Finite and Infinite Hypothesis Spaces – Mistake Bound Model.

UNIT IV INSTANT BASED LEARNING 9

K- Nearest Neighbour Learning – Locally weighted Regression – Radial Basis Functions – Case Based Learning.

UNIT V ADVANCED LEARNING 9

Learning Sets of Rules – Sequential Covering Algorithm – Learning Rule Set – First Order Rules – Sets of First Order Rules – Induction on Inverted Deduction – Inverting Resolution – Analytical Learning – Perfect Domain Theories – Explanation Base Learning – FOCL Algorithm – Reinforcement Learning – Task – Q-Learning – Temporal Difference Learning

TOTAL :45 PERIODS**OUTCOMES:**

At the end of the course, the students will be able to

- Differentiate between supervised, unsupervised, semi-supervised machine learning approaches
- Discuss the decision tree algorithm and identify and overcome the problem of overfitting
- Discuss and apply the back propagation algorithm and genetic algorithms to various problems
- Apply the Bayesian concepts to machine learning
- Analyse and suggest appropriate machine learning approaches for various types of problems

TEXT BOOK:

1. Tom M. Mitchell, “Machine Learning”, McGraw-Hill Education (India) Private Limited, 2013.

REFERENCES:

1. Ethem Alpaydin, “Introduction to Machine Learning (Adaptive Computation and Machine Learning)”, The MIT Press 2004.
2. Stephen Marsland, “Machine Learning: An Algorithmic Perspective”, CRC Press, 2009.


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OBJECTIVES:

- To understand different Internet Technologies.
- To learn java-specific web services architecture

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0 9

Web Essentials: Clients, Servers and Communication – The Internet – Basic Internet protocols – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Semantic elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations.

UNIT II CLIENT SIDE PROGRAMMING 9

Java Script: An introduction to JavaScript–JavaScript DOM Model–Date and Objects,- Regular Expressions- Exception Handling-Validation-Built-in objects-Event Handling-DHTML with JavaScript- JSON introduction – Syntax – Function Files – Http Request – SQL.

UNIT III SERVER SIDE PROGRAMMING 9

Servlets: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions- Session Handling- Understanding Cookies- Installing and Configuring Apache Tomcat Web Server- DATABASE CONNECTIVITY: JDBC perspectives, JDBC program example - JSP: Understanding Java Server Pages-JSP Standard Tag Library (JSTL)-Creating HTML forms by embedding JSP code.

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UNIT IV PHP and XML 9

An introduction to PHP: PHP- Using PHP- Variables- Program control- Built-in functions- Form Validation- Regular Expressions - File handling – Cookies - Connecting to Database. XML: Basic XML- Document Type Definition- XML Schema DOM and Presenting XML, XML Parsers and Validation, XSL and XSLT Transformation, News Feed (RSS and ATOM).

UNIT V INTRODUCTION TO AJAX and WEB SERVICES 9

AJAX: Ajax Client Server Architecture-XML Http Request Object-Call Back Methods; Web Services: Introduction- Java web services Basics – Creating, Publishing, Testing and Describing a Web services (WSDL)-Consuming a web service, Database Driven web service from an application –SOAP.

TOTAL 45 PERIODS**OUTCOMES:**

At the end of the course, the students should be able to:

- Construct a basic website using HTML and Cascading Style Sheets.
- Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
- Develop server side programs using Servlets and JSP.
- Construct simple web pages in PHP and to represent data in XML format.
- Use AJAX and web services to develop interactive web applications

TEXT BOOK:

1. Deitel and Deitel and Nieto, “Internet and World Wide Web - How to Program”, Prentice Hall, 5th Edition, 2011.

REFERENCES:

1. Stephen Wynkoop and John Burke “Running a Perfect Website”, QUE, 2nd Edition, 1999.
2. Chris Bates, Web Programming – Building Intranet Applications, 3rd Edition, Wiley Publications, 2009.
3. Jeffrey C and Jackson, “Web Technologies A Computer Science Perspective”, Pearson Education, 2011.
4. Gopalan N.P. and Akilandeswari J., “Web Technology”, Prentice Hall of India, 2011.
5. UttamK.Roy, “Web Technologies”, Oxford University Press, 2011.


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**RASH DRIVING ANALYSER USING MACHINE LEARNING AND
DEEP LEARNING**

A PROJECT REPORT

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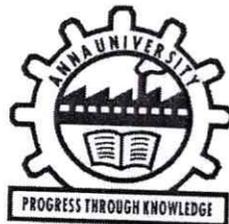
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BONAFIDE CERTIFICATE

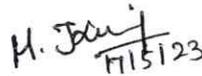
Certified that this project report "RASH DRIVING ANALYSER USING MACHINE LEARNING AND DEEP LEARNING" is the bonafide work of **MOHAMED ABUL FAIZ S (311819104021) NAVEENA R (311819104031)** who carried out the project work under my supervision.



Mr.S.VIMALA RITHAN

HEAD OF THE DEPARTMENT

Department of Computer Science and
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Siruseri,Chennai-603103



Mrs. M. Kanmani

SUPERVISOR

Assistant Professor
Department of Computer Science ar
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Mohammed Sathak A J College of
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Siruseri,Chennai-603103

Project Viva-Voice held on 18-05-2023



INTERNAL EXAMINER



PRINCIPAL

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Chennai - 600 092

EXTERNAL EXAMINER

ABSTRACT

This paper explores road car accident data patterns and proposes a predictive model by investigating meaningful data features, such as accident severity, the number of casualties, and the number of vehicles. The Rash Driving Analyser project has the potential for future expansion and improvement. One possible avenue for further development is the incorporation of additional sensors into the system. The current setup includes infrared and ultrasonic sensors to detect close calls and a GPS module to determine the current vehicle location.

However, the addition of cameras, gyroscopes, and accelerometers can provide more comprehensive and accurate data about the driver's behaviour and the surrounding environment.



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CHAPTER 7

RESULT AND FUTURE DISCUSSIONS

1 CONCLUSION

In this project, we are using a combination of Machine Learning and Deep Learning techniques to analyse rash driving behaviour. We have chosen the Random Forest algorithm to determine whether a close call has been made or not, and the RNN algorithm to predict the future driving behaviour of the driver. To collect data on close calls, we are using IoT devices such as IR sensors to determine the speed of nearby vehicles, ultrasonic sensors to determine the distance of nearby vehicles, and GPS modules to determine the distance of the current vehicle. This data is sent to a Flask backend using a POST API, where it is processed and used to train our models. We have also developed a web application and an Android application that allows users to view the close calls and a chart of close calls, as well as the predictions made by our models. In this project, we have succeeded in assessing the driving style of the driver and providing accurate statistics to the person or organization that owns the vehicle.

In conclusion, our project aims to provide a solution for analysing and predicting rash driving behaviour using a combination of IoT devices, Machine Learning, and Deep Learning techniques. By using the Random Forest algorithm and RNN algorithm, we can accurately determine close calls and predict future driving behaviour, which can be used to improve driver safety and prevent accidents.



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OBJECTIVES:

- To understand the need for machine learning for various problem solving
- To study the various supervised, semi-supervised and unsupervised learning algorithms in machine learning
- To understand the latest trends in machine learning
- To design appropriate machine learning algorithms for problem solving

UNIT I INTRODUCTION 9

Learning Problems – Perspectives and Issues – Concept Learning – Version Spaces and Candidate Eliminations – Inductive bias – Decision Tree learning – Representation – Algorithm – Heuristic Space Search.

UNIT II NEURAL NETWORKS AND GENETIC ALGORITHMS 9

Neural Network Representation – Problems – Perceptrons – Multilayer Networks and Back Propagation Algorithms – Advanced Topics – Genetic Algorithms – Hypothesis Space Search – Genetic Programming – Models of Evaluation and Learning.

UNIT III BAYESIAN AND COMPUTATIONAL LEARNING 9

Bayes Theorem – Concept Learning – Maximum Likelihood – Minimum Description Length Principle – Bayes Optimal Classifier – Gibbs Algorithm – Naïve Bayes Classifier – Bayesian Belief Network – EM Algorithm – Probability Learning – Sample Complexity – Finite and Infinite Hypothesis Spaces – Mistake Bound Model.

UNIT IV INSTANT BASED LEARNING 9

K- Nearest Neighbour Learning – Locally weighted Regression – Radial Basis Functions – Case Based Learning.

UNIT V ADVANCED LEARNING 9

Learning Sets of Rules – Sequential Covering Algorithm – Learning Rule Set – First Order Rules – Sets of First Order Rules – Induction on Inverted Deduction – Inverting Resolution – Analytical Learning – Perfect Domain Theories – Explanation Base Learning – FOCL Algorithm – Reinforcement Learning – Task – Q-Learning – Temporal Difference Learning

TOTAL :45 PERIODS**OUTCOMES:**

At the end of the course, the students will be able to

- Differentiate between supervised, unsupervised, semi-supervised machine learning approaches
- Discuss the decision tree algorithm and identify and overcome the problem of overfitting
- Discuss and apply the back propagation algorithm and genetic algorithms to various problems
- Apply the Bayesian concepts to machine learning
- Analyse and suggest appropriate machine learning approaches for various types of problems

TEXT BOOK:

1. Tom M. Mitchell, “Machine Learning”, McGraw-Hill Education (India) Private Limited, 2013.

REFERENCES:

1. Ethem Alpaydin, “Introduction to Machine Learning (Adaptive Computation and Machine Learning)”, The MIT Press 2004.
2. Stephen Marsland, “Machine Learning: An Algorithmic Perspective”, CRC Press, 2009.


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YUKI-THE HUMAN COMPANION ROBOT

A PROJECT REPORT

Submitted by

HARINE R (311818104015),

MUDDASIR AHMAD M (311818104304)

in partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

MOHAMED SATHAK A. J. COLLEGE OF ENGINEERING,

SIRUSERI CHENNAI – 603 103



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MAY 2023



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BONAFIDE CERTIFICATE

Certified that this project report “YUKI-THE HUMAN COMPANION ROBOT” is the bonafide work of MUDDASIR AHMAD M (311819104304), HARINE R (311819104015), who carried out the project work under my supervision.



Mr.S.VIMALATHITHAN

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Mr.S VIMALATHITHAN

SUPERVISOR

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Project Viva-Voice held on 18/05/2023



INTERNAL EXAMINER



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EXTERNAL EXAMINER

ABSTRACT

The objective of the robotics field is to create intelligent machines that can assist humans in a variety of ways. The development line of robotics is marked with the triad: industrial-assistive-social robots, that leads from human-robot separation toward human-robot interaction. A social robot is a robot able to act autonomously and to interact with humans using social cues. A social robot that can assist a human for a longer period of time is called a robotic companion. Results indicated that a large proportion of participants were in favor of a robot companion and saw the potential role as being an assistant, machine or servant. Few wanted a robot companion to be a friend. Household tasks were preferred to child/animal care tasks. Human like communication was desirable for a robot companion, whereas human like behavior and appearance were less essential. Results are discussed in relation to future research directions for the development of robot companions.



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CHAPTER 8

8.1 CONCLUSIONS

Taken together, the results paint a complex picture of the participants' experiences of the robots and the scenarios in which they were presented. Participants consistently rated the acceptability of the scenarios in which the robot was being used quite highly, and would often reference their daily lives when discussing the possibility of similar robots being used outside of the experimental setting. What is of particular interest is that the participants viewed the decision of having a robot for themselves and having a robot for others differently. When considering a robot for themselves, they would consider the companionship aspects (emotional and hedonic) qualities of the interaction. However, when considering it for others, the main concerns would be the utility and practicality. While interesting in itself, this phenomenon highlights the possibility of a tension between different users of a robot intended for care. As suggested by Bedaf et al, the primary user (the person whose home the robot operates in, and who will have the most interactions with the robot) may not be the person that commissions or organises the deployment of a robot companion in a care-scenario. Our findings suggest that even when carers or care professionals have a strong idea of the capabilities and interactions provided by a robot companion, they may still not share the perspective of the primary user. This suggests that while functional aspects of a robot companion can be decided by third parties, interactional aspects, such as expressive or other behaviours supporting companionship, may be best left to the primary user. Given that we emulated this aspect of decision making by making the care-aspect explicit in our questionnaire when assessing suitability for others, it becomes even more interesting that what participants deem important in acceptance of the robot is not what necessarily matters when deploying it for others (e.g. to fulfil medical needs).

HCI

Manufacturing

OBJECTIVES:

- To learn the foundations of Human Computer Interaction.
- To become familiar with the design technologies for individuals and persons with disabilities.
- To be aware of mobile HCI.
- To learn the guidelines for user interface.

UNIT I FOUNDATIONS OF HCI 9

The Human: I/O channels – Memory – Reasoning and problem solving; **The Computer:** Devices – Memory – processing and networks; **Interaction:** Models – frameworks – Ergonomics – styles – elements – interactivity- Paradigms. - **Case Studies**

UNIT II DESIGN & SOFTWARE PROCESS 9

Interactive Design: Basics – process – scenarios – navigation – screen design – Iteration and prototyping. **HCI in software process:** Software life cycle – usability engineering – Prototyping in practice – design rationale. **Design rules:** principles, standards, guidelines, rules. **Evaluation Techniques – Universal Design**

UNIT III MODELS AND THEORIES 9

HCI Models: Cognitive models: Socio-Organizational issues and stakeholder requirements – Communication and collaboration models-**Hypertext, Multimedia and WWW.**

UNIT IV MOBILE HCI 9

Mobile Ecosystem: Platforms, Application frameworks- **Types of Mobile Applications:** Widgets, Applications, Games- **Mobile Information Architecture,** Mobile 2.0, **Mobile Design:** Elements of Mobile Design, Tools. - **Case Studies**

UNIT V WEB INTERFACE DESIGN 9

Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow - Case Studies

TOTAL :45 PERIODS**OUTCOMES:**

Upon completion of the course, the students should be able to:

- Design effective dialog for HCI
- Design effective HCI for individuals and persons with disabilities.
- Assess the importance of user feedback.
- Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Web sites.
- Develop meaningful user interface.

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TEXT BOOKS:

1. Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, “Human Computer Interaction”, 3rd Edition, Pearson Education, 2004 (UNIT I, II & III)
2. Brian Fling, “Mobile Design and Development”, First Edition, O’Reilly Media Inc., 2009 (UNIT – IV)
3. Bill Scott and Theresa Neil, “Designing Web Interfaces”, First Edition, O’Reilly, 2009. (UNIT-V)



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**IOT BASED TRAFFIC CONGESTION MONITORING
AND THEFT ALARM**

A PROJECT REPORT

Submitted by

Shalini S (311819104044)

Susmitha V (311819104046)

in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

MOHAMED SATHAK A. J. COLLEGE OF ENGINEERING,

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MAY 2023



ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report “**IOT BASED TRAFFIC CONGESTION MONITORING AND THEFT ALARM**” is the bonafide work of **SHALINI S (311819104044), SUSMITHA V (311819104046)**who carried out the project work under my supervision.



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Mr.S VIMALATHITHAN

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Project Viva-Voice held on

18/05/2023



INTERNAL EXAMINER



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EXTERNAL EXAMINER

ABSTRACT

Now a day, traffic jams during rush hours is one of the major concerns. During rush hours, emergency vehicles like ambulances, police cars and fire brigade trucks get stuck in jams. Due to this, these emergency vehicles are not able to reach their destinations in time, resulting into a loss of human lives. We have developed a system which is used to provide clearance to any emergency vehicle by turning all the redlights to green on the path of the emergency vehicle, hence providing a complete green wave to the desired vehicle. In addition to the green wave path, the system will track as to len vehicle when it passes through a traffic light. So , it is an autonomous 2-tier system which will help in the identification of emergency vehicles or any other desired vehicle. it is a novel system which can be used to implement the concept of the green wave.



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CHAPTER 5

CONCLUSION&FUTURE WORK

This proposed system suggested a believable preparation for making continuous site visitors in mist founded IoV architectures for restricting an usual system interaction period. Firstly style and moving automobile formed mist centres through queuing theory. Afterwards, objectively determine a development factor to a fog authorized dumping factor. During that period, a dumping advancement problem got figured. At technique was build for fathoming an outlined factor through way of making plans the message stream allotment amongst unique mist hubs.

Future work will be based on how it can be implemented for roads which is having more number of lanes. Theft vehicles might be also get locked automatically by having the robber inside of it. We may also find the most efficient path for the emergency vehicle by connecting all the less solidity lanes over the city.



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OBJECTIVES:

- To understand the Architecture of 8086 microprocessor.
- To learn the design aspects of I/O and Memory Interfacing circuits.
- To interface microprocessors with supporting chips.
- To study the Architecture of 8051 microcontroller.
- To design a microcontroller based system

UNIT I THE 8086 MICROPROCESSOR 9

Introduction to 8086 – Microprocessor architecture – Addressing modes - Instruction set and assembler directives – Assembly language programming – Modular Programming - Linking and

Relocation - Stacks - Procedures – Macros – Interrupts and interrupt service routines – Byte and

String Manipulation.

UNIT II 8086 SYSTEM BUS STRUCTURE 9

8086 signals – Basic configurations – System bus timing – System design using 8086 – I/O programming – Introduction to Multiprogramming – System Bus Structure – Multiprocessor configurations – Coprocessor, Closely coupled and loosely Coupled configurations – Introduction

to advanced processors.

UNIT III I/O INTERFACING 9

Memory Interfacing and I/O interfacing - Parallel communication interface – Serial communication

interface – D/A and A/D Interface - Timer – Keyboard /display controller – Interrupt controller –

DMA controller – Programming and applications Case studies: Traffic Light control, LED display ,

LCD display, Keyboard display interface and Alarm Controller.

UNIT IV MICROCONTROLLER 9

Architecture of 8051 – Special Function Registers(SFRs) - I/O Pins Ports and Circuits - Instruction

set - Addressing modes - Assembly language programming.

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UNIT V INTERFACING MICROCONTROLLER 9

Programming 8051 Timers - Serial Port Programming - Interrupts Programming – LCD & Keyboard Interfacing - ADC, DAC & Sensor Interfacing - External Memory Interface- Stepper

Motor and Waveform generation - Comparison of Microprocessor, Microcontroller, PIC and ARM

processors

TOTAL: 45 PERIODS

OUTCOMES:

At the end of the course, the students should be able to:

- Understand and execute programs based on 8086 microprocessor.
- Design Memory Interfacing circuits.
- Design and interface I/O circuits.
- Design and implement 8051 microcontroller based systems.

TEXT BOOKS:

1. Yu-Cheng Liu, Glenn A.Gibson, “Microcomputer Systems: The 8086 / 8088 Family -



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Architecture, Programming and Design”, Second Edition, Prentice Hall of India, 2007.
(UNIT I- III)

2. Mohamed Ali Mazidi, Janice Gillispie Mazidi, Rolin McKinlay, “The 8051
Microcontroller and
Embedded Systems: Using Assembly and C”, Second Edition, Pearson education, 2011.
(UNIT IV-V)

REFERENCES:

1. Douglas V.Hall, “Microprocessors and Interfacing, Programming and Hardware”,TMH,2012
2. A.K.Ray,K.M.Bhurchandi,”Advanced Microprocessors and Peripherals “3rd edition, Tata McGrawHill,2012





MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING INTERNSHIP CERTIFICATES

ACADEMIC YEAR : 2022-2023

S.No	Name of the Student	Name of the Organization	Dates ,Period	Related Subject
1	Dharshini K	Updater Service Limited	22-08-2022 to 02-09-2022	Information Retrieval
2	Dharshini K	Web Development	20/09/2023 to 20/10/2023	Java with Angular UI Development
3	Dharshini K	Full Stack with Angular	03/07/2023 to 20/03/2023	Web Development
4	Rufeena Mehsabeen	Updater Service Limited	22-08-2022 to 02-09-2022	Information Retrieval
5	Rufeena Mehsabeen	Web Development	20/09/2023 to 20/10/2023	Web Development
6	Shree Hari	Potissimus arrow shoes	18-08-2022 to 31-08-2022	Web Application
7	Subash	Disenosys	01/07/2023 to 22/07/2023	Digital Marketing
8	Uma maheswari	Disenosys	01/07/2023 to 22/07/2023	Digital Marketing
9	M Harine	Disenosys	01/07/2023 to 22/07/2023	Digital Marketing
10	K Harine	Disenosys	01/07/2023 to 22/07/2023	Digital Marketing
11	Gulabi Basharath.A	Disenosys	01/07/2023 to 22/07/2023	Digital Marketing
12	Swetha.S	Disenosys	01/07/2023 to 22/07/2023	Digital Marketing
13	Mohammed Jameel Asfer.Z	Disenosys	01/07/2023 to 22/07/2023	Digital Marketing
14	Lenatamil.D	Disenosys	01/07/2023 to 22/07/2023	Digital Marketing
15	Mohamed Farhan	JFX Events India	01/07/2023 to 22/07/2023	Information Retrieval
16	Mohamed Irfan	JFX Events India	01/07/2023 to 22/07/2023	Web Development
17	Mohammed Ibrahim Arsath	JFX Events India	01/07/2023 to 22/07/2023	Python Machine learning and Deepleaning
18	Musthabushira.S.M	Hepto Technologies	20/09/2022 to 28/02/2023	Web Development
19	Naveena R	Hepto Technologies	20/09/2022 to 28/02/2023	Web Development
20	Hussaina Barveen J R	Hepto Technologies	20/09/2022 to 28/02/2023	Web Development
21	Mohammed Abul Faiz	Hepto Technologies	20/09/2022 to 28/02/2023	Web Development

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07-09-2022

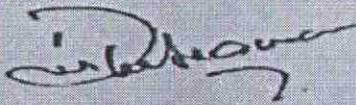
INTERNSHIP CERTIFICATE

This is to certify that Ms. Darshini K (Reg No: 311821104006) B.E. Student from Mohamed Sathak A.J. College of Engineering, No.34, Rajiv Gandhi Road (OMR), IT Highway, Siruseri IT Park, Chennai-603103, has enormously contributed towards the internship training period from 22nd August 2022 to 02nd September 2022. She has successfully completed the internship entitled on "Information Technology"

It is observed that she is sincere and prompt in discharging the duties assigned to her from time to time.

On behalf of our organization, we wish her all the best in all her future endeavours.

For Updater Services Ltd.,



Subramanian P.M
Vice President-HR & Legal



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CS8080 INFORMATION RETRIEVAL TECHNIQUES

OBJECTIVES:

- To understand the basics of Information Retrieval.
- To understand machine learning techniques for text classification and clustering.
- To understand various search engine system operations.
- To learn different techniques of recommender system.

UNIT I INTRODUCTION

Information Retrieval – Early Developments – The IR Problem – The User's Task – Information versus Data Retrieval - The IR System – The Software Architecture of the IR System – The Retrieval and Ranking Processes - The Web – The e-Publishing Era – How the web changed Search – Practical Issues on the Web – How People Search – Search Interfaces Today – Visualization in Search Interfaces.

UNIT II MODELING AND RETRIEVAL EVALUATION

Basic IR Models - Boolean Model - TF-IDF (Term Frequency/Inverse Document Frequency) Weighting - Vector Model – Probabilistic Model – Latent Semantic Indexing Model – Neural Network Model – Retrieval Evaluation – Retrieval Metrics – Precision and Recall – Reference Collection – User-based Evaluation – Relevance Feedback and Query Expansion – Explicit Relevance Feedback.

UNIT III TEXT CLASSIFICATION AND CLUSTERING

A Characterization of Text Classification – Unsupervised Algorithms: Clustering – Naïve Text Classification – Supervised Algorithms – Decision Tree – k-NN Classifier – SVM Classifier – Feature Selection or Dimensionality Reduction – Evaluation metrics – Accuracy and Error – Organizing the classes – Indexing and Searching – Inverted Indexes – Sequential Searching – Multi-dimensional Indexing.

UNIT IV WEB RETRIEVAL AND WEB CRAWLING

The Web – Search Engine Architectures – Cluster based Architecture – Distributed Architectures – Search Engine Ranking – Link based Ranking – Simple Ranking Functions – Learning to Rank – Evaluations -- Search Engine Ranking – Search Engine User Interaction – Browsing – Applications of a Web Crawler – Taxonomy – Architecture and Implementation – Scheduling Algorithms – Evaluation.

UNIT V RECOMMENDER SYSTEM

Recommender Systems Functions – Data and Knowledge Sources – Recommendation Techniques – Basics of Content-based Recommender Systems – High Level Architecture – Advantages and Drawbacks of Content-based Filtering – Collaborative Filtering – Matrix factorization models – Neighborhood models.


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ZOHOTECH'S

Training & Placement Services

Certificate of Completion

FULL STACK- JAVA WITH ANGULAR CERTIFIED DEVELOPER

We hereby certify that K. Darshini (Reg.No 311821104006) pursuing his/her BE-COMPUTER SCIENCE at Mohamed Sathak A.J. College of Engineering Chennai successfully completed his/her internship in our organization, the period of internship is from July 03-2023 to July 20-2023. His/her has shown keen interest in Java with Angular UI Development. His/her attendance and conduct was good during the training period.

We wish his/her all the best towards his/her academic and professional career.

Nandhinee S

Nandhinee S
Director of Training.
Zohotech's Services.

Zohotech's Placement Services **PRINCIPAL**
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COURSE OBJECTIVES:

- To understand Object Oriented Programming concepts and basics of Java programming language
- To know the principles of packages, inheritance and interfaces
- To develop a java application with threads and generics classes
- To define exceptions and use I/O streams
- To design and build Graphical User Interface Application using JAVAFX

UNIT I INTRODUCTION TO OOP AND JAVA

Overview of OOP – Object oriented programming paradigms – Features of Object Oriented Programming – Java Buzzwords – Overview of Java – Data Types, Variables and Arrays – Operators – Control Statements – Programming Structures in Java – Defining classes in Java – Constructors-Methods -Access specifiers - Static members- Java Doc comments

UNIT II INHERITANCE, PACKAGES AND INTERFACES

Overloading Methods – Objects as Parameters – Returning Objects –Static, Nested and Inner Classes. Inheritance: Basics– Types of Inheritance -Super keyword - Method Overriding – Dynamic Method Dispatch –Abstract Classes – final with Inheritance. Packages and Interfaces: Packages – Packages and Member Access – Importing Packages – Interfaces.

UNIT III EXCEPTION HANDLING AND MULTITHREADING

Exception Handling basics – Multiple catch Clauses – Nested try Statements – Java's Built-in Exceptions – User defined Exception. Multithreaded Programming: Java Thread Model–Creating a Thread and Multiple Threads – Priorities – Synchronization – Inter Thread Communication- Suspending –Resuming, and Stopping Threads –Multithreading. Wrappers – Auto boxing.

UNIT IV I/O, GENERICS, STRING HANDLING

I/O Basics – Reading and Writing Console I/O – Reading and Writing Files. Generics: Generic Programming – Generic classes – Generic Methods – Bounded Types – Restrictions and Limitations. Strings: Basic String class, methods and String Buffer Class.

UNIT V JAVAFX EVENT HANDLING, CONTROLS AND COMPONENTS

JAVAFX Events and Controls: Event Basics – Handling Key and Mouse Events. Controls: Checkbox, ToggleButton – RadioButtons – ListView – ComboBox – ChoiceBox – Text Controls – ScrollPane. Layouts – FlowPane – HBox and VBox – BorderPane – StackPane – GridPane. Menus – Basics – Menu – Menu bars – MenuItem.

08/11/2023

Internship Completion Certificate

This is to certify that Ms.K Darshini – 3rd Year computer science student from Mohamed Sathak AJ College of Engineering has successfully completed her one-month internship program of Basics in Web Development and Elixir Language in our organization from 20/09/2023 to 20/10/2023.

We wish you all success in your career.

For Wynwy Technologies Pvt Ltd


Subramanian P M
Vice President – HR & Legal


PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (Old IIT)
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COURSE OBJECTIVES:

- To understand different Internet Technologies
- To learn java-specific web services architecture
- To Develop web applications using frameworks

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0

Web Essentials: Clients, Servers and Communication – The Internet – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations. Bootstrap Framework

UNIT II CLIENT SIDE PROGRAMMING

Java Script: An introduction to JavaScript–JavaScript DOM Model-Exception Handling-Validation- Built-in objects-Event Handling- DHTML with JavaScript-JSON introduction – Syntax – Function Files.

UNIT III SERVER SIDE PROGRAMMING

Servlets: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions- Session Handling- Understanding Cookies- DATABASE CONNECTIVITY: JDBC.

UNIT IV PHP and XML

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UNIT V INTRODUCTION TO ANGULAR and WEB APPLICATIONS FRAMEWORKS

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07-09-2022

INTERNSHIP CERTIFICATE

This is to certify that Ms. Rufeena Mehsabeen (Reg No: 311821104046) B.E. Student from Mohamed Sathak A.J. College of Engineering, No.34, Rajiv Gandhi Road (OIMR), IT Highway, Siruseri IT Park, Chennai-603103, has enormously contributed towards the internship training period from 22nd August 2022 to 02nd September 2022. She has successfully completed the internship entitled on "Information Technology"

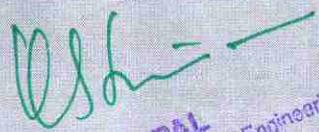
It is observed that she is sincere and prompt in discharging the duties assigned to her from time to time.

On behalf of our organization, we wish her all the best in all her future endeavours.

For Updater Services Ltd.,



Subramanian P.M
Vice President-HR & Legal



PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OIMR)
Siruseri - IT Highway Egattur,
Chennai - 603103.

CS8080 INFORMATION RETRIEVAL TECHNIQUES

OBJECTIVES:

- To understand the basics of Information Retrieval.
- To understand machine learning techniques for text classification and clustering.
- To understand various search engine system operations.
- To learn different techniques of recommender system.

UNIT I INTRODUCTION

Information Retrieval – Early Developments – The IR Problem – The User's Task – Information versus Data Retrieval - The IR System – The Software Architecture of the IR System – The Retrieval and Ranking Processes - The Web – The e-Publishing Era – How the web changed Search – Practical Issues on the Web – How People Search – Search Interfaces Today – Visualization in Search Interfaces.

UNIT II MODELING AND RETRIEVAL EVALUATION

Basic IR Models - Boolean Model - TF-IDF (Term Frequency/Inverse Document Frequency) Weighting - Vector Model – Probabilistic Model – Latent Semantic Indexing Model – Neural Network Model – Retrieval Evaluation – Retrieval Metrics – Precision and Recall – Reference Collection – User-based Evaluation – Relevance Feedback and Query Expansion – Explicit Relevance Feedback.

UNIT III TEXT CLASSIFICATION AND CLUSTERING

A Characterization of Text Classification – Unsupervised Algorithms: Clustering – Naïve Text Classification – Supervised Algorithms – Decision Tree – k-NN Classifier – SVM Classifier – Feature Selection or Dimensionality Reduction – Evaluation metrics – Accuracy and Error – Organizing the classes – Indexing and Searching – Inverted Indexes – Sequential Searching – Multi-dimensional Indexing.

UNIT IV WEB RETRIEVAL AND WEB CRAWLING

The Web – Search Engine Architectures – Cluster based Architecture – Distributed Architectures – Search Engine Ranking – Link based Ranking – Simple Ranking Functions – Learning to Rank – Evaluations -- Search Engine Ranking – Search Engine User Interaction – Browsing – Applications of a Web Crawler – Taxonomy – Architecture and Implementation – Scheduling Algorithms – Evaluation.

UNIT V RECOMMENDER SYSTEM

Recommender Systems Functions – Data and Knowledge Sources – Recommendation Techniques – Basics of Content-based Recommender Systems – High Level Architecture – Advantages and Drawbacks of Content-based Filtering – Collaborative Filtering – Matrix factorization models – Neighborhood models.


PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (O.M.R)
Sipcot - IT Highway Egattur,
Chennai - 603103.

08/11/2023

Internship Completion Certificate

This is to certify that Ms.M.Rufeena Mehsabeen – 3rd Year computer science student from Mohamed Sathak AJ College of Engineering has successfully completed her one-month internship program of Basics in Web Development and Elixir Language in our organization from 20/09/2023 to 20/10/2023.

We wish you all success in your career

For Wynwy Technologies Pvt Ltd


Subramanian P M
Vice President – HR & Legal


PRINCIPAL
Mohamed Sathak AJ College of Engineering
No.34, Rajiv Gandhi Salai (Old)
Sipcot - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To understand different Internet Technologies
- To learn java-specific web services architecture
- To Develop web applications using frameworks

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0

Web Essentials: Clients, Servers and Communication – The Internet – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations. Bootstrap Framework

UNIT II CLIENT SIDE PROGRAMMING

Java Script: An introduction to JavaScript–JavaScript DOM Model-Exception Handling-Validation- Built-in objects-Event Handling- DHTML with JavaScript-JSON introduction – Syntax – Function Files.

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POTISSIMUS ARROW SHOES PVT. LTD.,

30/08/2022

SUB: INTERNSHIP COMPLETION LETTER

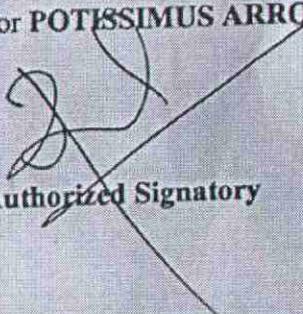
We are glad to inform you that MR. SHREE HARLB from MOHAMMED SATHAK AJ COLLEGE OF ENGINEERING, CHENNAI has successfully completed his internship POTISSIMUS ARROW SHOES PVT LTD from 18th AUG, 2022 – 31st AUGUST, 2022.

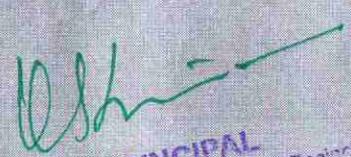
During his internship, he was exposed to the various activities in CUSTOMER ORDER PROCESSING AND PURCHASE ORDER GENERATION IN ERP

We found him extremely inquisitive and hard working. He was very much interested to learn the function of our core division and also willing to put his best efforts and get in to the depth of the subject to understand it better.

His association with us was very fruitful and we wish him all the best in his future endeavours.

For POTISSIMUS ARROW SHOES PVT LTD


Authorized Signatory


PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.31, Rajiv Gandhi Salai (Old)
Sipcot - IT Highway Egattur,
Chennai - 603103.

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Diseñosys™

CERTIFICATE OF INTERNSHIP

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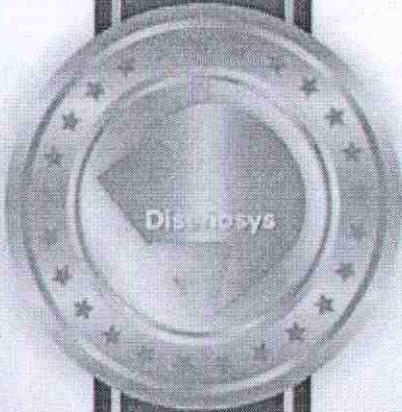
Subash M

has completed the Digital Marketing Internship at Diseñosys
from 01st July 2023 to 31st July 2023

We found him/her sincere, hardworking, dedicated and
result-oriented.

She/He worked well as part of the team during her/his tenure.
We take this opportunity to thank and wish him/her
all the best for his/her future.

Awarded on 01st August 2023.



Handwritten signature of Praveen Kumar S in black ink.

PRAVEEN KUMAR S
CEO, DISENOSYS

Handwritten signature of the principal in green ink.

PRINCIPAL
Mohamed Saifur A.J. College of Engineering
Sri Chaitanya Gandhi Sagar (OWIF)
Sri Chaitanya Highway Egattur,
Sri Chaitanya - 600103.

COURSE OBJECTIVES:

- The primary objective of this module is to examine and explore the role and importance of digital marketing in today's rapidly changing business environment.
- It also focuses on how digital marketing can be utilized by organizations and how its effectiveness can be measured.

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Online Market space- Digital Marketing Strategy- Components - Opportunities for building Brand Website - Planning and Creation - Content Marketing.

UNIT II SEARCH ENGINE OPTIMISATION

Search Engine optimisation - Keyword Strategy- SEO Strategy - SEO success factors -On-Page Techniques - Off-Page Techniques. Search Engine Marketing- How Search Engine works- SEM components- PPC advertising -Display Advertisement

UNIT III E- MAIL MARKETING

E- Mail Marketing - Types of E- Mail Marketing - Email Automation - Lead Generation - Integrating Email with Social Media and Mobile- Measuring and maximizing email campaign effectiveness. Mobile Marketing- Mobile Inventory/channels- Location based; Context based; Coupons and offers, Mobile Apps, Mobile Commerce, SMS Campaigns-Profiling and targeting

UNIT IV SOCIAL MEDIA MARKETING

Social Media Marketing - Social Media Channels- Leveraging Social media for brand conversations and buzz. Successful /benchmark Social media campaigns. Engagement Marketing- Building Customer relationships - Creating Loyalty drivers - Influencer Marketing.

UNIT V DIGITAL TRANSFORMATION

Digital Transformation & Channel Attribution- Analytics- Ad-words, Email, Mobile, Social Media, Web Analytics Changing your strategy based on analysis- Recent trends in Digital .


PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

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**PRINCIPAL**

Mohamed Sathak A.J. College of Engineering
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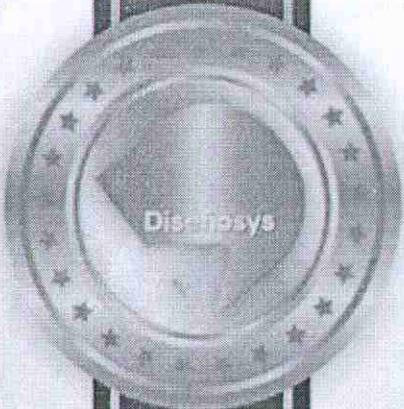
Harini M

has completed the Digital Marketing Internship at Diseñosys
from 01st July 2023 to 31st July 2023

We found him/her sincere, hardworking, dedicated and
result-oriented.

She/He worked well as part of the team during her/his tenure.
We take this opportunity to thank and wish him/her
all the best for his/her future.

Awarded on 01st August 2023.



PRAVEEN KUMAR S
CEO, DISENOSYS

PRINCIPAL

Dr. P. S. Sathak A.J. College of Engineering
No. 10, S. P. Road, Sathak A.J. College
Sipahchintala, Hyderabad - 500084
Andhra Pradesh - 500084

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PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No 34, Rajiv Gandhi Salai (OMR)
Sector - 17, Highway Egattur,
Chennai - 603103.

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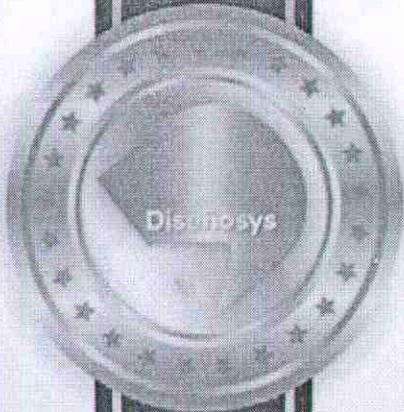
Harini K

has completed the Digital Marketing Internship at Diseñosys
from 01st July 2023 to 31st July 2023

We found him/her sincere, hardworking, dedicated and
result-oriented.

She/He worked well as part of the team during her/his tenure.
We take this opportunity to thank and wish him/her
all the best for his/her future.

Awarded on 01st August 2023.



A handwritten signature in black ink, appearing to read "Praveen Kumar S".

PRAVEEN KUMAR S
CEO, DISENOSYS

A handwritten signature in green ink, appearing to read "Sathak A. J.".

PRINCIPAL

Sathak A. J. College of Engineering
Gandhi Salai (OMR)
Sipcot - 605 007
Chennai - 605 007

CCW332

DIGITAL MARKETING

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PRINCIPAL
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Sipcot - IT Highway Egattur,
Chennai - 603103.

Diseñosys™

CERTIFICATE OF INTERNSHIP

THIS CERTIFIES THAT

Gulabi Basharath A

has completed the Digital Marketing Internship at Diseñosys
from 01st July 2023 to 31st July 2023

We found him/her sincere, hardworking, dedicated and
result-oriented.

She/He worked well as part of the team during her/his tenure.
We take this opportunity to thank and wish him/her
all the best for his/her future.

Awarded on 01st August 2023.



A handwritten signature in black ink, appearing to read "Praveen Kumar S".

PRAVEEN KUMAR S
CEO, DISENOSYS

A handwritten signature in green ink, appearing to read "Ashish".

PRINCIPAL

Mohamed Sathak A.J. College of Engineering
No. 24, Rajiv Gandhi Salai (OMR)
SIPCOT, Itanagar, Egattur,
Chennai - 600 030.

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**PRINCIPAL**

Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (Old)
Sipcot - IT Highway Egattur,
Chennai - 603103.

Diseñosys™

CERTIFICATE OF INTERNSHIP

THIS CERTIFIES THAT

Swetha S

has completed the Digital Marketing Internship at Diseñosys
from 01st July 2023 to 31st July 2023

We found him/her sincere, hardworking, dedicated and
result-oriented.

She/He worked well as part of the team during her/his tenure.
We take this opportunity to thank and wish him/her
all the best for his/her future.

Awarded on 01st August 2023.



A handwritten signature in black ink, appearing to read "Praveen Kumar S".

PRAVEEN KUMAR S
CEO, DISENOSYS

A handwritten signature in green ink, appearing to read "Mohamed Sathak A.J.".

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No. 34, Rajiv Gandhi Salai (OMR)
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PRINCIPAL
Mohamed Sathak A.J. College of Engineering
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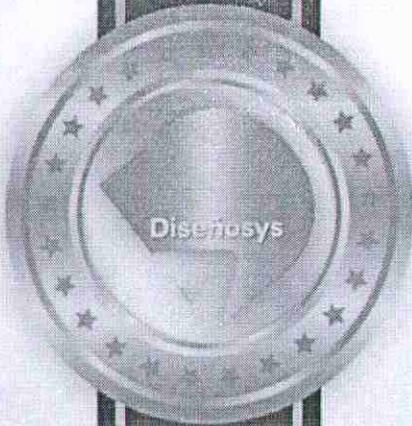
Mohammed Jameel Asfer Z

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She/He worked well as part of the team during her/his tenure.
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Awarded on 01st August 2023.



A handwritten signature in green ink, appearing to read "M. Sathak A.J.", written over a horizontal line.

PRINCIPAL

Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai
Sipcot - IT Highway Egattur,
Chennai - 603103.

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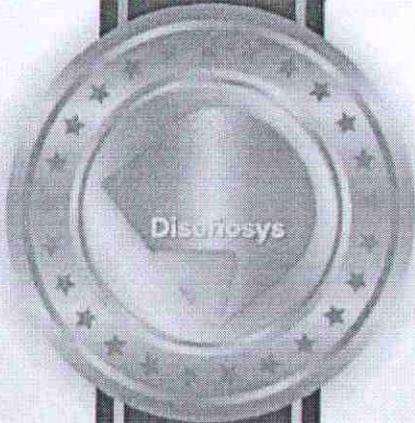
Lenatamil D

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PRAVEEN KUMAR S
CEO, DISENOSYS

A handwritten signature in green ink, appearing to read 'Mohamed Sathak A.J.'.

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No. 24, Rajiv Gandhi Salai (OMR)
Sipahkhalu, Uththaravayal, Egattur,
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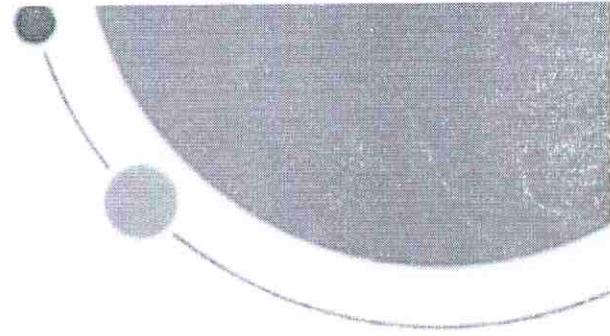
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PRINCIPAL
Mohamed Sathak A.I. College of Engineering
No.34, Rajiv Gandhi Salai (O.M.R)
Sipcot - IT Highway Egattur,
Chennai - 603103.



Certificate of Internship Completion

This is to formally certify that **Mr.Mohammed Farhan G** (Student ID: 311821104035), a student of B.E CSE at Mohamed Sathak A.J College of Engineering, -603103, has successfully completed an internship with our organization, Digitech Evoqe Pvt Ltd.

The internship, spanning six weeks, from 10th July to 24th August, involved immersion and training in the field of Information Technology. Mr.Mohammed Farhan G was exposed to diverse operational processes during this period.

Digitech Evoqe Pvt Ltd. recognizes and appreciates the effort and dedication shown by Mr.Mohammed Farhan G Throughout his internship. We sincerely believe this practical experience will be valuable to his educational journey and professional career.

We wish Mr.Mohammed Farhan G every success in his future endeavors, confident that he will apply the same zeal and commitment to excellence he demonstrated during his time with us.

We wish him every success in his life and career.

Given this day, August 25, 2023.



Jubran Siddique
Founder & CEO



PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

CS8080 INFORMATION RETRIEVAL TECHNIQUES

OBJECTIVES:

- To understand the basics of Information Retrieval.
- To understand machine learning techniques for text classification and clustering.
- To understand various search engine system operations.
- To learn different techniques of recommender system.

UNIT I INTRODUCTION

Information Retrieval – Early Developments – The IR Problem – The User's Task – Information versus Data Retrieval - The IR System – The Software Architecture of the IR System – The Retrieval and Ranking Processes - The Web – The e-Publishing Era – How the web changed Search – Practical Issues on the Web – How People Search – Search Interfaces Today – Visualization in Search Interfaces.

UNIT II MODELING AND RETRIEVAL EVALUATION

Basic IR Models - Boolean Model - TF-IDF (Term Frequency/Inverse Document Frequency) Weighting - Vector Model – Probabilistic Model – Latent Semantic Indexing Model – Neural Network Model – Retrieval Evaluation – Retrieval Metrics – Precision and Recall – Reference Collection – User-based Evaluation – Relevance Feedback and Query Expansion – Explicit Relevance Feedback.

UNIT III TEXT CLASSIFICATION AND CLUSTERING

A Characterization of Text Classification – Unsupervised Algorithms: Clustering – Naïve Text Classification – Supervised Algorithms – Decision Tree – k-NN Classifier – SVM Classifier – Feature Selection or Dimensionality Reduction – Evaluation metrics – Accuracy and Error – Organizing the classes – Indexing and Searching – Inverted Indexes – Sequential Searching – Multi-dimensional Indexing.

UNIT IV WEB RETRIEVAL AND WEB CRAWLING

The Web – Search Engine Architectures – Cluster based Architecture – Distributed Architectures – Search Engine Ranking – Link based Ranking – Simple Ranking Functions – Learning to Rank – Evaluations -- Search Engine Ranking – Search Engine User Interaction – Browsing – Applications of a Web Crawler – Taxonomy – Architecture and Implementation – Scheduling Algorithms – Evaluation.

UNIT V RECOMMENDER SYSTEM

Recommender Systems Functions – Data and Knowledge Sources – Recommendation Techniques – Basics of Content-based Recommender Systems – High Level Architecture – Advantages and Drawbacks of Content-based Filtering – Collaborative Filtering – Matrix factorization models – Neighborhood models.



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Chennai - 603103.



CERTIFICATE OF COMPLETION

This is to certify **MOHAMMED IRFAN N** has successfully completed web designing internship from July 01 to July 31 provided by iTech Solutions, Chennai by passing an online exam, conducted remotely by the concern department.

August 2nd 2023


VENKATESH R
CEO



PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To understand different Internet Technologies
- To learn java-specific web services architecture
- To Develop web applications using frameworks

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0

Web Essentials: Clients, Servers and Communication – The Internet – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations. Bootstrap Framework

UNIT II CLIENT SIDE PROGRAMMING

Java Script: An introduction to JavaScript–JavaScript DOM Model-Exception Handling-Validation- Built-in objects-Event Handling- DHTML with JavaScript- JSON introduction – Syntax – Function Files.

UNIT III SERVER SIDE PROGRAMMING

Servlets: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions- Session Handling- Understanding Cookies- DATABASE CONNECTIVITY: JDBC.

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Chennai - 603103.

AG Groups:

- ✓ Active Galaxy
- ✓ AG Research Institute for M.Phil / PHD
- ✓ IJADST (e-ISSN : 2582-1059)
- ✓ AG Welfare Association



Certificate issue date : 09/08/2023
Certificate issue ID : AG202052990

CERTIFICATE OF TECHNICAL TRAINING

This is certified that **Mr. MOHAMED IBRAHIM ARSHATH M.I. (311821104028)** a student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has successfully completed his internship training in our organization from 06/07/2023 to 05/08/2023 and in the field of **Python, Machine Learning and Deep Learning.**



Technical Head,

Dr. S. GOPALAKRISHNAN BE, ME, PhD,
ACTIVE GALAXY.

gk.activegalaxy@gmail.com | +91 9655123644 | www.activegalaxy.in | www.ijadst.com
Head Office: 10, Second Floor, Durga Street, South Kamaraj Nagar, Tambaram Sanatorium, Chennai -47.

PRINCIPAL

Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To understand the basics of algorithmic problem solving.
- To learn to solve problems using Python conditionals and loops.
- To define Python functions and use function calls to solve problems.
- To use Python data structures – lists, tuples, dictionaries to represent complex data. GE3151 Syllabus PROBLEM SOLVING AND PYTHON PROGRAMMING
- To do input/output with files in Python.

UNIT I COMPUTATIONAL THINKING AND PROBLEM SOLVING

Fundamentals of Computing – Identification of Computational Problems -Algorithms, building blocks of algorithms (statements, state, control flow, functions), notation (pseudo code, flow chart, programming language), algorithmic problem solving, simple strategies for developing algorithms (iteration, recursion). Illustrative problems: find minimum in a list, insert a card in a list of sorted cards, guess an integer number in a range, Towers of Hanoi.

UNIT II DATA TYPES, EXPRESSIONS, STATEMENTS

Python interpreter and interactive mode, debugging; values and types: int, float, boolean, string, and list; variables, expressions, statements, tuple assignment, precedence of operators, comments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points.

UNIT III CONTROL FLOW, FUNCTIONS, STRINGS

Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays. Illustrative programs: square root, gcd, exponentiation, sum an array of numbers, linear search, binary search

UNIT IV LISTS, TUPLES, DICTIONARIES

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters; Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods; advanced list processing – list comprehension; Illustrative programs: simple sorting, histogram, Students marks statement, Retail bill preparation.

UNIT V FILES, MODULES, PACKAGES

Files and exception: text files, reading and writing files, format operator: command line arguments, errors and exceptions, handling exceptions, modules, packages; Illustrative programs: word count, copy file, Voter's age validation, Marks range validation (0-100).

ash
 PRINCIPAL
 Mohan Babu Institute of Engineering
 No. 34, 11th Street, Sairath (GMR)
 SIPCOT - IT Hub, Chittoor, Andhra Pradesh
 Chennai - 600 036

MACHINE LEARNING

- To understand the basic concepts of machine learning.
- To understand and build supervised learning models.
- To understand and build unsupervised learning models.
- To evaluate the algorithms based on corresponding metrics identified

UNIT I INTRODUCTION TO MACHINE LEARNING

Review of Linear Algebra for machine learning; Introduction and motivation for machine learning; Examples of machine learning applications, Vapnik-Chervonenkis (VC) dimension, Probably Approximately Correct (PAC) learning, Hypothesis spaces, Inductive bias, Generalization, Bias variance trade-off.

UNIT II SUPERVISED LEARNING

Linear Regression Models: Least squares, single & multiple variables, Bayesian linear regression, gradient descent, Linear Classification Models: Discriminant function – Perceptron algorithm, Probabilistic discriminative model - Logistic regression, Probabilistic generative model – Naive Bayes, Maximum margin classifier – Support vector machine, Decision Tree, Random Forests

UNIT III ENSEMBLE TECHNIQUES AND UNSUPERVISED LEARNING

Combining multiple learners: Model combination schemes, Voting, Ensemble Learning - bagging, boosting, stacking, Unsupervised learning: K-means, Instance Based Learning: KNN, Gaussian mixture models and Expectation maximization.

UNIT IV NEURAL NETWORKS

Multilayer perceptron, activation functions, network training – gradient descent optimization – stochastic gradient descent, error backpropagation, from shallow networks to deep networks – Unit saturation (aka the vanishing gradient problem) – ReLU, hyperparameter tuning, batch normalization, regularization, dropout.

UNIT V DESIGN AND ANALYSIS OF MACHINE LEARNING EXPERIMENTS

Guidelines for machine learning experiments, Cross Validation (CV) and resampling – K-fold CV, bootstrapping, measuring classifier performance, assessing a single classification algorithm and comparing two classification algorithms – t test, McNemar's test, K-fold CV paired t test



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Chennai - 603103.



HEPTO

HEPTO TECHNOLOGIES

INTERNSHIP CERTIFICATE OF COMPLETION

28th February , 2023

To Whomsoever It May Concern

This is to certify that **Ms.MUSTHABUSHIRA S.M** has done his internship in WHATSAPP CHATBOT USING MERN STACK DEVELOPMENT at Hepto Technologies, Tenkasi from **20th September 2022 to 28th February 2023**

She has worked on a project titled GOO HEPTO was aimed at WHATSAPP CHATBOT USING MERN STACK DEVELOPMENT under the guidance of Mr.Vallinayagam.

During the period of his internship program with us, she was found punctual, hardworking and inquisitive. We wish her every success in her life and career.

Wishing you all the Very Best

Yours sincerely,
For Hepto Technologies



DIRECTOR

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (Old),
Sipcot - IT Highway Egattur,
Chennai - 603103.



COURSE OBJECTIVES:

- To understand different Internet Technologies
- To learn java-specific web services architecture
- To Develop web applications using frameworks

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0

Web Essentials: Clients, Servers and Communication – The Internet – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations. Bootstrap Framework

UNIT II CLIENT SIDE PROGRAMMING

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INTERNSHIP CERTIFICATE OF COMPLETION

28th February , 2023

To Whomsoever It May Concern

This is to certify that **Ms. NAVEENA R** has done his internship in WHATSAPP CHATBOT USING MERN STACK DEVELOPMENT at Hepto Technologies, Tenkasi from **20th September 2022 to 28th February 2023**

She has worked on a project titled GOO HEPTO was aimed at WHATSAPP CHATBOT USING MERN STACK DEVELOPMENT under the guidance of Mr. Vallinayagam.

During the period of his internship program with us, she was found punctual, hardworking and inquisitive. We wish her every success in her life and career.

Wishing you all the Very Best

Yours sincerely,
For Hepto Technologies



DIRECTOR

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai
Sipcot - IT Highway Egattur,
Chennai - 603103.



COURSE OBJECTIVES:

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HEPTO TECHNOLOGIES

INTERNSHIP CERTIFICATE OF COMPLETION

28th February , 2023

To Whomsoever It May Concern

This is to certify that **Ms.HUSSAINA PARVEEN J B** has done his internship in WHATSAPP CHATBOT USING MERN STACK DEVELOPMENT at Hepto Technologies, Tenkasi from **20th September 2022 to 28th February 2023**

She has worked on a project titled GOO HEPTO was aimed at WHATSAPP CHATBOT USING MERN STACK DEVELOPMENT under the guidance of Mr.Vallinayagam.

During the period of his internship program with us, she was found punctual, hardworking and inquisitive. We wish her every success in her life and career.

Wishing you all the Very Best

Yours sincerely,
For Hepto Technologies



DIRECTOR

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
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Sipcot - IT Highway Egattur,
Chennai - 603103.



No:7 Narasingapuram 5th Street, Guindy Chennai-600 032
www.heptotechnologies.com | sales@heptotechnologies.com
Call: +91 90921 222 11

COURSE OBJECTIVES:

- To understand different Internet Technologies
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UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0

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HEPTO TECHNOLOGIES

INTERNSHIP CERTIFICATE OF COMPLETION

28th February , 2023

To Whomsoever It May Concern

This is to certify that **Mr. MOHAMED ABUL FAIZ S** has done his internship in WHATSAPP CHATBOT USING MERN STACK DEVELOPMENT at Hepto Technologies, Tenkasi from **20th September 2022 to 28th February 2023**

He has worked on a project titled GOO HEPTO was aimed at WHATSAPP CHATBOT USING MERN STACK DEVELOPMENT under the guidance of Mr. Vallinayagam.

During the period of his internship program with us, he was found punctual, hardworking and inquisitive. We wish him every success in his life and career.

Wishing you all the Very Best

Yours sincerely,
For Hepto Technologies



DIRECTOR

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (Orinji)
Sipcot - IT Highway Egattur,
Chennai - 603103.



COURSE OBJECTIVES:

- To understand different Internet Technologies
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- To Develop web applications using frameworks

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0

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PRINCIPAL

Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

15th January 2023

INTERNSHIP COMPLETION CERTIFICATE

This is to certify that **Ms. BHUVANESHWARI.V.B. (Reg.No. 311819104302)** Student of **B.E.,(Computer Science Engineering), Mohamed Sathak AJ College of Engineering - Chennai,** has successfully completed the Internship **DATA SCIENCE** platform from **October 2022** to **December 2022** in our company. During the period, she had been exposed to different processes and found to be Punctual, Hardworking And Inquisitive.

We wish her every success in life and career.

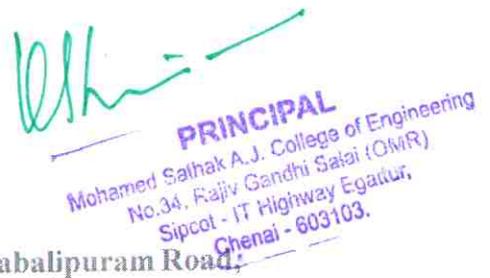
For **Shiash Info Solutions Private Limited**



Ashwini Kanniyappan

Manager – Human Resources

Shiash Info Solutions Private Limited
#51, Level4, TowerA, Rattha TEK Meadows, Old Mahabalipuram Road,
Sholinganallur, Chennai – 600119, TamilNadu, India
+914466255681 info@shiash.com



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Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To understand the data science fundamentals and process.
- To learn to describe the data for the data science process.
- To learn to describe the relationship between data.
- To utilize the Python libraries for Data Wrangling.
- To present and interpret data using visualization libraries in Python

UNIT I INTRODUCTION

Data Science: Benefits and uses – facets of data - Data Science Process: Overview – Defining research goals – Retrieving data – Data preparation - Exploratory Data analysis – build the model–presenting findings and building applications - Data Mining - Data Warehousing – Basic Statistical descriptions of Data

UNIT II DESCRIBING DATA

Types of Data - Types of Variables -Describing Data with Tables and Graphs –Describing Data with Averages - Describing Variability - Normal Distributions and Standard (z) Scores

UNIT III DESCRIBING RELATIONSHIPS

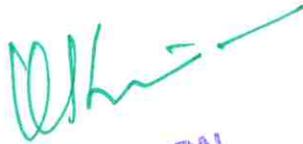
Correlation –Scatter plots –correlation coefficient for quantitative data –computational formula for correlation coefficient – Regression –regression line –least squares regression line – Standard error of estimate – interpretation of r^2 –multiple regression equations –regression towards the mean

UNIT IV PYTHON LIBRARIES FOR DATA WRANGLING

Basics of Numpy arrays –aggregations –computations on arrays –comparisons, masks, boolean logic – fancy indexing – structured arrays – Data manipulation with Pandas – data indexing and selection – operating on data – missing data – Hierarchical indexing – combining datasets – aggregation and grouping – pivot tables

UNIT V DATA VISUALIZATION

Importing Matplotlib – Line plots – Scatter plots – visualizing errors – density and contour plots – Histograms – legends – colors – subplots – text and annotation – customization – three dimensional plotting - Geographic Data with Basemap - Visualization with Seaborn.


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No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

Date: 28/ April /2023

SUB: PROJECT COMPLETION CERTIFICATE

This is to certify that final year students of has completed the Project Work duration from **10th January 2023 to 10th April 2023** under the domain "**Java**". During the Project, all information and data collected from you should be kept confidential.

Team Members:

1. MR BASHEER AHAMAD V (REG NO: 311819104008)
2. MS BHUVANESHWARI V B (REG NO: 311819104302)
3. MR HAMEED JAHUFAR HAJA ALAUDIN N H(REG NO: 311819104012)

Topic :Proxy Re-Encryption for Secure Medical Data Sharing in Clouds.

We appreciate your interest in **DLK CAREER DEVELOPMENT**

"Best Wishes for Your Future Endeavors "

Yours Sincerely,


Velmurugan
Project Team Head

DLK CAREER DEVELOPMENT





COURSE OBJECTIVES:

- To understand Object Oriented Programming concepts and basics of Java programming language
- To know the principles of packages, inheritance and interfaces
- To develop a java application with threads and generics classes
- To define exceptions and use I/O streams
- To design and build Graphical User Interface Application using JAVAFX

UNIT I INTRODUCTION TO OOP AND JAVA

Overview of OOP – Object oriented programming paradigms – Features of Object Oriented Programming – Java Buzzwords – Overview of Java – Data Types, Variables and Arrays – Operators – Control Statements – Programming Structures in Java – Defining classes in Java – Constructors-Methods -Access specifiers - Static members- Java Doc comments

UNIT II INHERITANCE, PACKAGES AND INTERFACES

Overloading Methods – Objects as Parameters – Returning Objects –Static, Nested and Inner Classes. Inheritance: Basics– Types of Inheritance -Super keyword - Method Overriding – Dynamic Method Dispatch –Abstract Classes – final with Inheritance. Packages and Interfaces: Packages – Packages and Member Access – Importing Packages – Interfaces.

UNIT III EXCEPTION HANDLING AND MULTITHREADING

Exception Handling basics – Multiple catch Clauses – Nested try Statements – Java's Built-in Exceptions – User defined Exception. Multithreaded Programming: Java Thread Model- Creating a Thread and Multiple Threads – Priorities – Synchronization – Inter Thread Communication- Suspending –Resuming, and Stopping Threads –Multithreading. Wrappers – Auto boxing.

UNIT IV I/O, GENERICS, STRING HANDLING

I/O Basics – Reading and Writing Console I/O – Reading and Writing Files. Generics: Generic Programming – Generic classes – Generic Methods – Bounded Types – Restrictions and Limitations. Strings: Basic String class, methods and String Buffer Class.

UNIT V JAVAFX EVENT HANDLING, CONTROLS AND COMPONENTS

JAVAFX Events and Controls: Event Basics – Handling Key and Mouse Events. Controls: Checkbox, ToggleButton – RadioButtons – ListView – ComboBox – ChoiceBox – Text Controls – ScrollPane. Layouts – FlowPane – HBox and VBox – BorderPane – StackPane – GridPane. Menus – Basics – Menu – Menu bars – MenuItem.

SMARTHER TECHNOLOGIES

No 87, Radha Nagar, Perumbakkam,
Chennai - 600100
Email : smarther@outlook.com
Phone : 9003162488 , 044-49528891

SMARTHER

28th November, 2022

INTERNSHIP CERTIFICATE

To Whomsoever It May Concern,

This is to certify that Mr. Abrar Mushrraf.P has done his internship in Android Application Development at Smarther Technologies, Chennai from 17 August, 2022 to 25 November, 2022.

During the internship he demonstrated good development skills with a self-motivated attitude to learn new things. His performance exceeded expectations and was able to complete the project successfully on time.

We wish him all the best for his future endeavours.

From, Smarther Technologies

For SMARTHER TECHNOLOGIES
[Signature]
Proprietor
Authorized Signature

[Signature]
PRINCIPAL
Mohamed Sathish A. J. College of Engineering
No.34, Rajiv Gandhi Salai (O.M.R)
SIPCOT - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To understand different Internet Technologies
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UNIT IV PHP and XML

An introduction to PHP: PHP- Using PHP- Variables- Program control- Built-in functions- Form Validation. XML: Basic XML- Document Type Definition- XML Schema, XML Parsers and Validation, XSL ,

UNIT V INTRODUCTION TO ANGULAR and WEB APPLICATIONS FRAMEWORKS

Introduction to AngularJS, MVC Architecture, Understanding ng attributes, Expressions and data binding, Conditional Directives, Style Directives, Controllers, Filters, Forms, Routers, Modules, Services; Web Applications Frameworks and Tools – Firebase- Docker- Node JS- React- Django- UI & UX.

BLUEHAUTE/IT-ENRICH

01 March 2022

CERTIFICATE

This is to certify that Miss. S.Prathiksha (IT Trainee), Third year CSE of Mohamed Sathak A.J college of Engineering, Chennai has successfully completed her project on "Dynamic Itinerary Analysis & Recommendation" for our IT Department.

She have learned and developed a MERN Application Online during 01 Feb 2022 to 28 Feb 2022.

During the Training period there her initiative and behaviour was found to be good.

We wish her for the best in all her future endeavours and careers.

For BLUEHAUTE

ALEEMA KN

Proprietor



PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To understand different Internet Technologies
- To learn java-specific web services architecture
- To Develop web applications using frameworks

UNIT I WEBSITE BASICS, HTML 5, CSS 3, WEB 2.0

Web Essentials: Clients, Servers and Communication – The Internet – World wide web – HTTP Request Message – HTTP Response Message – Web Clients – Web Servers – HTML5 – Tables – Lists – Image – HTML5 control elements – Drag and Drop – Audio – Video controls - CSS3 – Inline, embedded and external style sheets – Rule cascading – Inheritance – Backgrounds – Border Images – Colors – Shadows – Text – Transformations – Transitions – Animations. Bootstrap Framework

UNIT II CLIENT SIDE PROGRAMMING

Java Script: An introduction to JavaScript–JavaScript DOM Model-Exception Handling-Validation- Built-in objects-Event Handling- DHTML with JavaScript-JSON introduction – Syntax – Function Files.

UNIT III SERVER SIDE PROGRAMMING

Servlets: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions- Session Handling- Understanding Cookies- DATABASE CONNECTIVITY: JDBC.

UNIT IV PHP and XML

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