



MOHAMED SATHAK A J COLLEGE OF ENGINEERING
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)



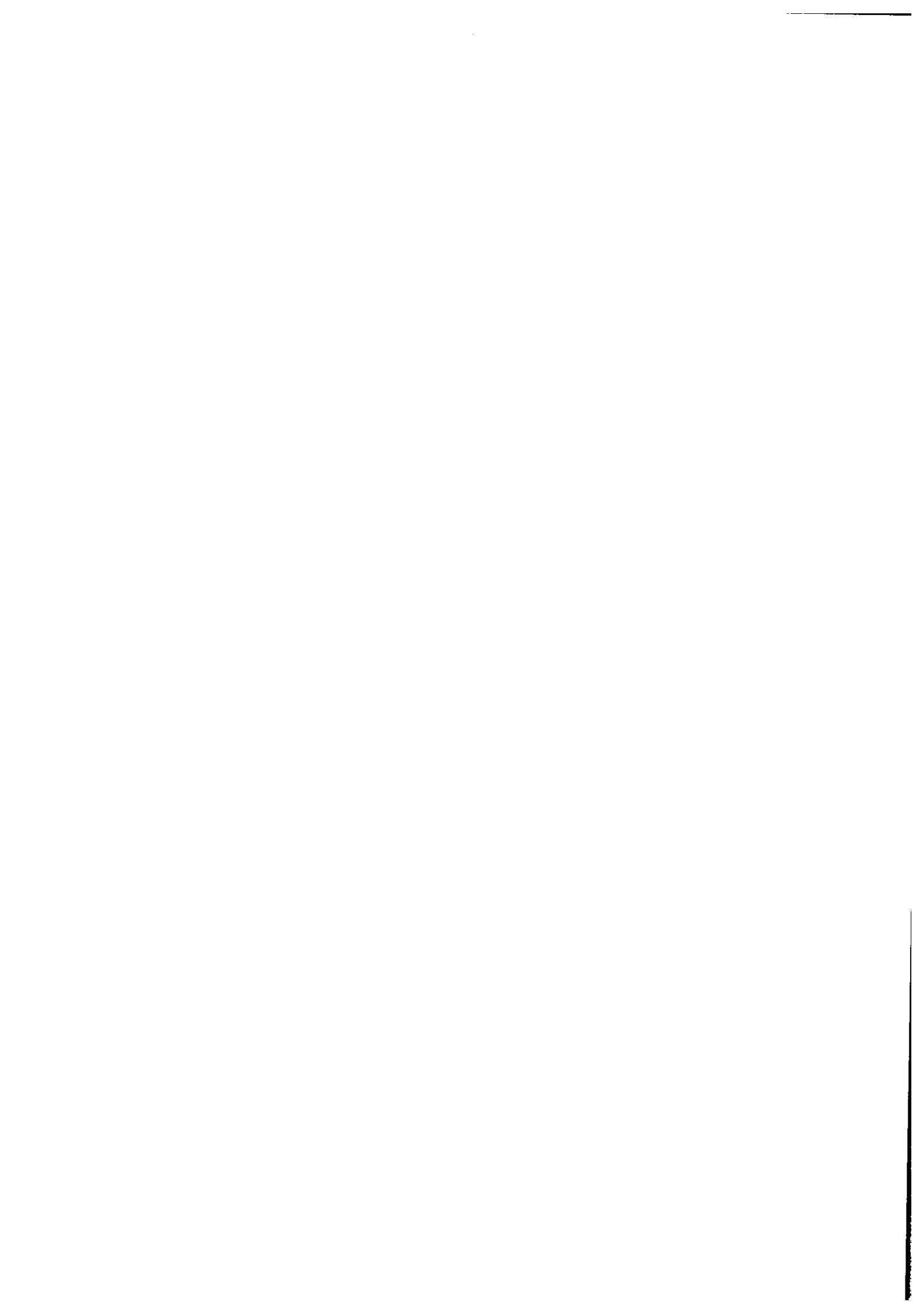
DEPARTMENT OF INFORMATION TECHNOLOGY

1.3.2 Course That Include Experimental Learning Trough Project Work / Field Work / Internship during 2022 – 2023

Sl.No	Title of final year project	Subject Code & Subject name related to the Project
1.	Facial emotion based music recommendation using machine learning	CS8092 - Computer Graphics And Multimedia CS8082 - Machine Learning Techniques
2.	IOT based irrigation farming system	CS8081 - Internet Of Things IT8072 - Embedded Systems EC8691- Microprocessors And Microcontrollers
3.	Horizon – the telemedicine app	IT8602 - Mobile Communication CS8662 - Mobile Application Development Laboratory
4.	Thyroid prediction using machine learning	CS8082 - Machine Learning Techniques
5.	Secure data sharing in IOT through proxy Re-Encryption on block chain	CS8081 - Internet Of Things CS8792 - Cryptography And Network Security
6.	Diabetes mellitus predictive analysis system using multi – model supervised technique	CS8082 - Machine Learning Techniques
7.	Human anomaly detection with bounding box methodology	CS8079 - Human Computer Interaction
8.	Bitcoin Heist Ransom ware attack prediction using DS and ML	CS8082 - Machine Learning Techniques CS8091 - Big Data Analytics
9.	Fire Detection using image processing techniques	EC8093 - Digital Image Processing
10.	Finding missing person using AI and Computer vision	IT 8601 - Computational Intelligence CS8086 Soft Computing



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Facial Emotion Based Music Recommendation Using Machine Learning

A PROJECT REPORT

Submitted by

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in partial fulfilment for the award of the degree of

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in

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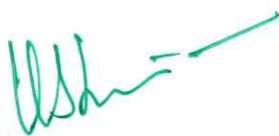


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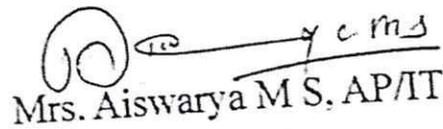
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BONAFIDE CERTIFICATE

Certified that this project report titled "FACE EMOTION BASED MUSIC RECCOMENDATYION USING MACHINE LEARNING"-is the bonafide work of MOHAMED YUNUS (311819205013) and MOHAMED IQRAMULLAH S (311819205010) and FAIZAL S (311819205004) who carried out the project work under my supervision.


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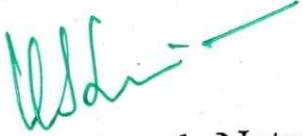
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ABSTRACT

The project "Emotion-Based Music Recommendation System" aims to develop a machine learning model that recommends music based on the user's emotion. The system uses facial emotion recognition to determine the user's emotional state and then suggests music that corresponds to that emotion. The project involves the use of convolutional neural networks for facial emotion recognition and the creation of a music dataset with emotion tags. The system is implemented using Python, OpenCV, and Tensorflow. The project has the potential to improve the user's listening experience by providing personalized music recommendations based on their current emotional state.

The Emotion-Based Music Recommendation System has several applications in the field of entertainment and can be used in various settings such as music streaming platforms, mood-based playlists, and in-store music systems. The system could be beneficial for people who struggle to express their emotions or have difficulty choosing the appropriate music to listen to for a particular mood.

KEYWORDS: Facial emotion recognition, Convolutional Neural Network, Music recommendation, Machine Learning, Mood-based playlist, Emotion detection


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6. CONCLUSION AND FUTURE SCOPE

CONCLUSION:

In conclusion, the emotion-based music recommendation system developed using MediaPipe and Streamlit has the potential to enhance the user experience by providing personalized music recommendations based on the user's facial emotions. The project has successfully implemented the face emotion recognition model using MediaPipe and integrated it with the music recommendation system, which is deployed using Streamlit.

The project faced several challenges, such as the availability of labeled datasets for face emotion recognition and the need for tuning the model to improve its accuracy. However, these challenges were addressed by using CNN model which improved the performance of the model.

FUTURE SCOPE:

1. User-specific recommendations: The current system provides recommendations based solely on the user's facial emotions. However, future work could involve incorporating other user-specific factors, such as their listening history and preferences, to further personalize the recommendations.
2. Integration with existing music platforms: The current system is a standalone application. Future work could involve integrating the emotion-based music recommendation system with existing music platforms, such as Spotify or Apple Music, to enhance the user experience of these platforms.



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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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IOT BASED IRRIGATION FARMING SYSTEM

A PROJECT REPORT

Submitted by

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Sequential Program Model, concurrent Model, object oriented Model.

UNIT IV RTOS BASED EMBEDDED SYSTEM DESIGN 9

Introduction to basic concepts of RTOS- Task, process & threads, interrupt routines in RTOS, Multiprocessing and Multitasking, Preemptive and non-preemptive scheduling, Task communication shared memory, message passing-, Inter process Communication – synchronization between processes-semaphores, Mailbox, pipes, priority inversion, priority inheritance.

UNIT V EMBEDDED SYSTEM APPLICATION AND DEVELOPMENT 9

Case Study of Washing Machine- Automotive Application- Smart card System Application-ATM machine –Digital camera

TOTAL : 45 PERIODS

OUTCOMES:

- Ability to understand and analyze Embedded systems.
- Ability to suggest an embedded system for a given application.
- Ability to operate various Embedded Development Strategies
- Ability to study about the bus Communication in processors.
- Ability to acquire knowledge on various processor scheduling algorithms.
- Ability to understand basics of Real time operating system.

TEXT BOOKS:

1. Peckol, "Embedded system Design", John Wiley & Sons,2010
2. Lyla B Das," Embedded Systems-An Integrated Approach", Pearson, 2013
3. Shibu. K.V, "Introduction to Embedded Systems", 2e, Mc graw Hill, 2017.

REFERENCES

1. Raj Kamal, 'Embedded System-Architecture, Programming, Design', Mc Graw Hill, 2013.
2. C.R.Sarma, "Embedded Systems Engineering", University Press (India) Pvt. Ltd, 2013.
3. Tammy Noergaard, "Embedded Systems Architecture", Elsevier, 2006.
4. Han-Way Huang, "Embedded system Design Using C8051", Cengage Learning, 2009.
5. Rajib Mall "Real-Time systems Theory and Practice" Pearson Education, 2007.

EE8661 POWER ELECTRONICS AND DRIVES LABORATORY L T P C
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OBJECTIVES:

- To provide hands on experience with power electronic converters and testing.

LIST OF EXPERIMENTS

- 1 Gate Pulse Generation using R, RC and UJT.
- 2 Characteristics of SCR and TRIAC
- 3 Characteristics of MOSFET and IGBT
- 4 AC to DC half controlled converter
- 5 AC to DC fully controlled Converter
- 6 Step down and step up MOSFET based choppers
- 7 IGBT based single phase PWM inverter

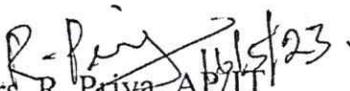
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BONAFIDE CERTIFICATE

Certified that this project report "Iot Based Irrigation Farming System" is the bonafide work of PEER AZIM MEERAN A (311819205301), SAMEERA BANU N (311819205026), and ASHIP AKASH T (311819205002) who carried out the project under my supervision.

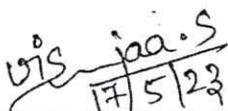

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ABSTRACT

The main objective of this project is to propose a Smart IOT based Agriculture assisting farmers in getting Live Data (Temperature, Soil Moisture) for efficient environment monitoring which will enable them to do smart farming and increase their overall yield and quality of products. The Agriculture being proposed via this project is integrated with Arduino Technology, Breadboard mixed with various sensors and live data feed can be obtained online from Blynk Application.

In order to achieve this, an IoT (Internet of Thing) Module is interfaced to the Arduino Node MCU board at the receiver end while on the transmitter end, a Blynk Application on the mobile phones sends ON/OFF commands to the receiver where loads are connected. By touching the specified location on the Blynk App, the loads can be turned ON/OFF remotely through this technology. The loads are operated by IoT board through relay module.

Along with this we use soil sensor, which detects whether soil is dry or wet. When the soil condition is dry soil sensor give command to IoT module to start the pump and when soil becomes wet it gives command to stop the pump. It works in accordance with the soil condition. This project is complete smart project for advance irrigation.


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CHAPTER 5

CONCLUSION

Smart irrigation is an important technology in saving water for the plant which requires more attention especially in Iraq. Using WSN as an Internet of things gives more flexibility in system monitoring and management. Results show that the proposed network can be used along the season with minimum maintenance.

The proposed Smart Irrigation System for agriculture is that the farmer can operate the motor by remotely in his smart phone anywhere in the world either in manual mode or in Auto mode and he can verify the soil status and also the temperature of the motor by the graph in the mobile phone itself.

The proposed irrigation system for agricultural purpose can measure the Soil moisture, temperature of the field and transmits the real time data to the user through the Wi-Fi and IoT server, if there is any deviation from the span of reference value, then the user can send the command through the IoT server to maintain the set point value of field parameter for a proper irrigation and proposed IoT based irrigation system is better than the recently proposed other irrigation systems.


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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

EC8093
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DIGITAL IMAGE PROCESSING

L T P

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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

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

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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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HORIZON THE TELEMEDICINE APP

A PROJECT REPORT

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MAY 2023

*mobile
Application*

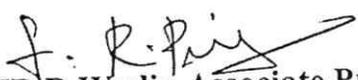
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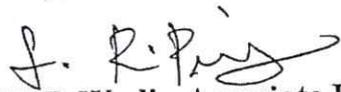


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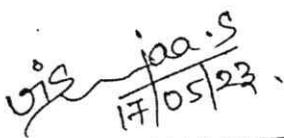

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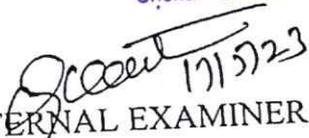

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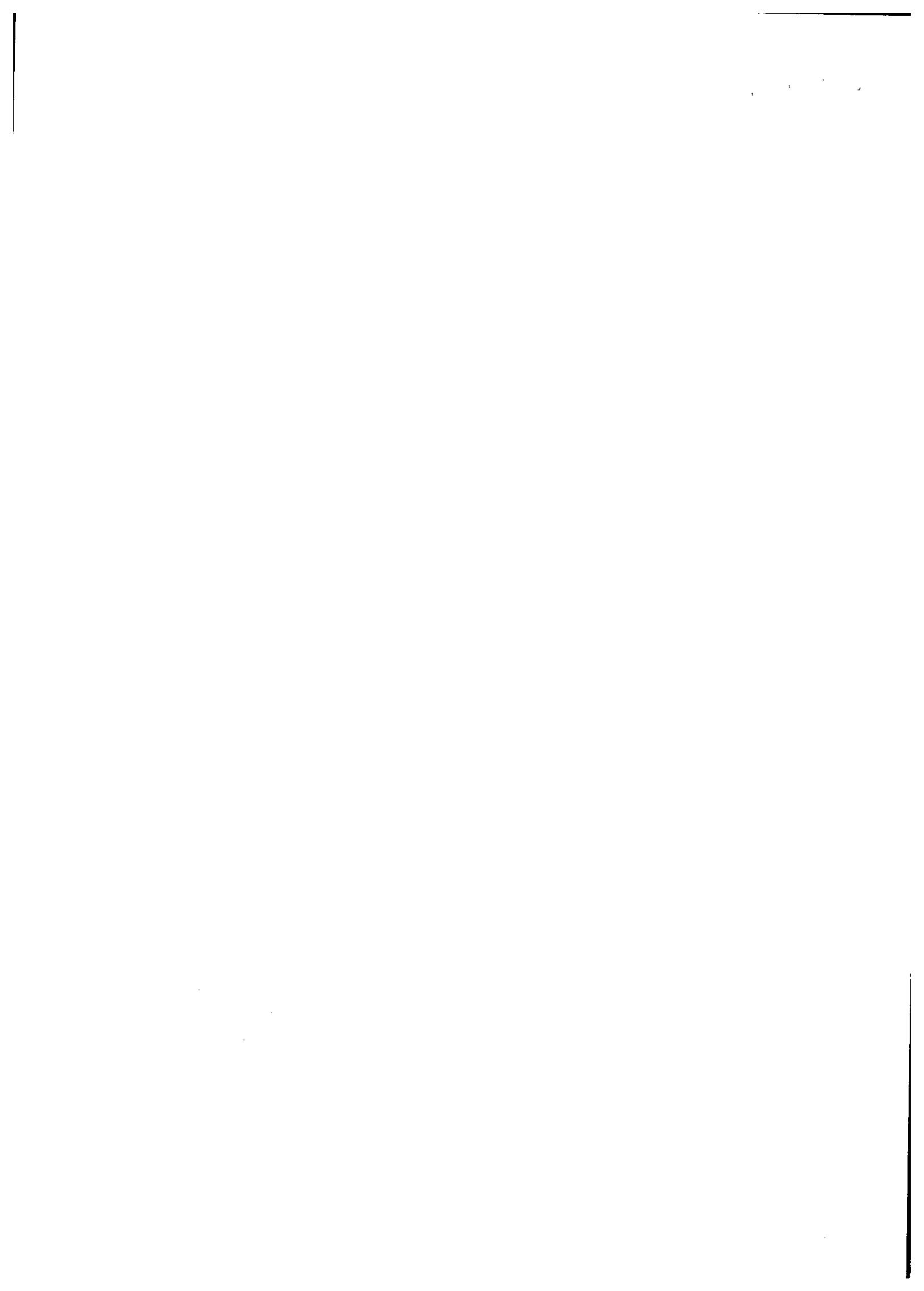
ABSTRACT

Telemedicine has become increasingly popular in recent years, especially with the ongoing COVID-19 pandemic. With social distancing measures in place, patients may prefer to use a remote platform to receive medical attention without risking exposure to the virus. The telemedicine platform described in this abstract offers patients the ability to schedule appointments with doctors online, and the platform can also send appointment reminders to patients to ensure that they do not miss their appointments.

During the video consultation, patients can communicate with their doctors in real-time, discuss their symptoms, and receive medical advice and diagnosis. The chat feature also enables patients to communicate with their doctors outside of appointments and receive quick answers to their medical questions. This can be particularly beneficial for patients who may have concerns about their health but may not require a full video consultation.

Moreover, the telemedicine platform provides doctors with the ability to review patients' medical records and histories, allowing them to provide personalized medical care tailored to each patient's unique needs. This level of personalized care can lead to better patient outcomes and higher patient satisfaction rates. In summary, this telemedicine platform offers a convenient and effective way for patients to access medical care remotely. With features such as appointment scheduling, video consultations, and chat capabilities, patients can receive timely medical care without the need for in-person visits. This platform can help to improve access to healthcare for patients, particularly those living in remote or underserved areas, and enhance the quality of medical care through the use of technology.

KEYWORDS : Telemedicine, Appointment Scheduling, Video Consultation, Online Chat.



7. CONCLUSION AND FUTURE SCOPE

7.1. CONCLUSION

In conclusion, the Horizon app is a comprehensive telemedicine solution that leverages advanced technologies to revolutionize the healthcare industry. With its user-friendly interface, secure data storage on Firebase, and seamless integration of key features like appointment booking, online consultation, video consultations using Agora SDK, and chat services powered by PubNub Chat API, Horizon offers patients a convenient and efficient way to access medical care remotely.

The app's appointment booking feature streamlines the scheduling process, allowing patients to easily book appointments with healthcare providers at their preferred time slots. The online consultation feature enables patients to connect with doctors remotely, ensuring timely access to medical advice, diagnosis, and prescriptions. The video consultation feature powered by Agora SDK facilitates face-to-face interactions, bringing a sense of personal connection and enhancing the doctor-patient relationship.

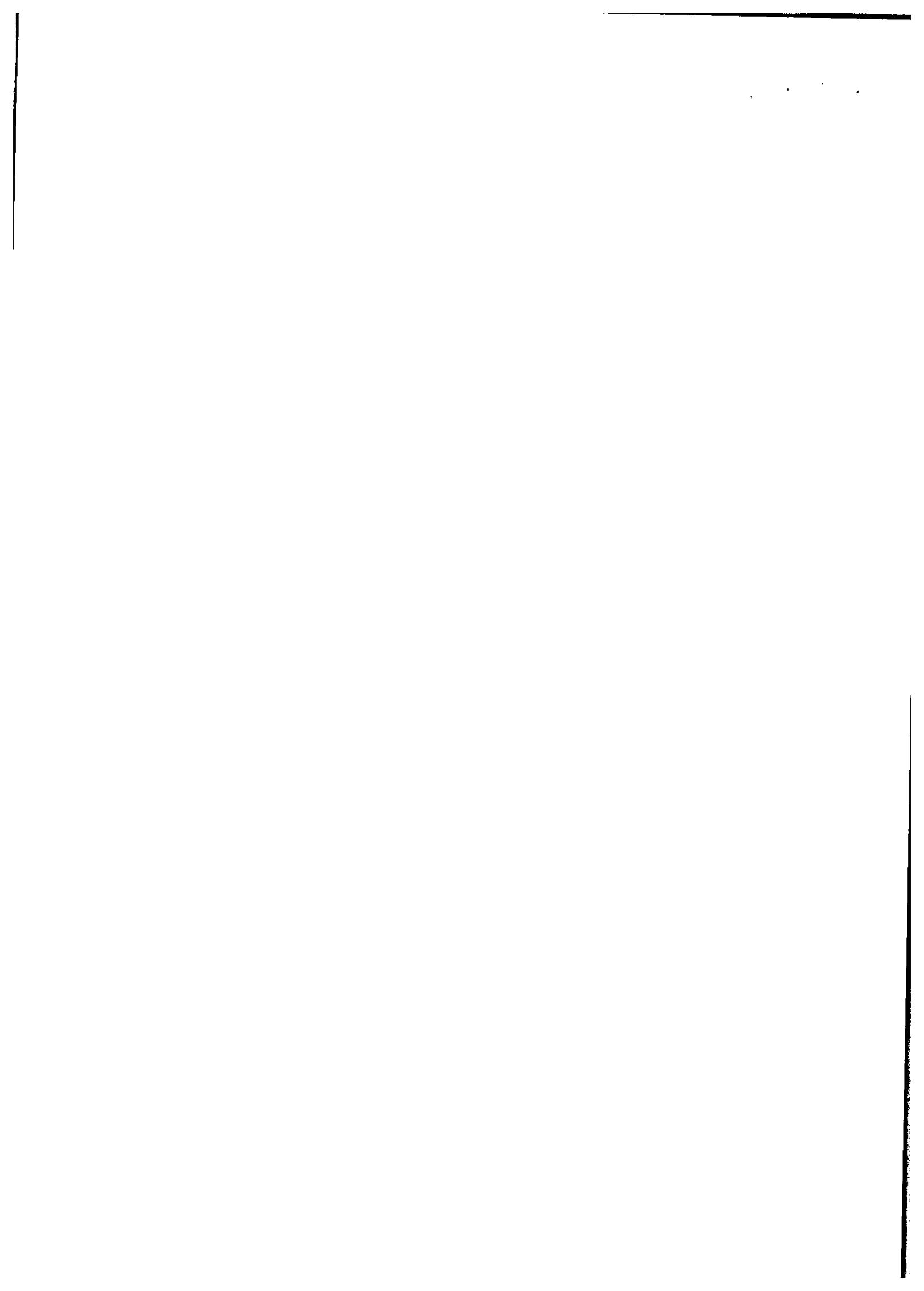
Furthermore, the chat with doctor feature, leveraging the PubNub Chat API, allows patients to communicate with healthcare providers outside of scheduled appointments, facilitating quick and convenient access to medical guidance and support. These features collectively improve access to healthcare, particularly for individuals in remote or underserved areas, while enhancing patient outcomes and satisfaction.

With its emphasis on data security, the Horizon app utilizes Firebase to store doctors' and users' data, ensuring confidentiality and compliance with privacy regulations. This commitment to privacy and security creates a trusted environment for patients to seek medical care remotely.

In essence, the Horizon app transforms the traditional healthcare delivery model by providing a user-centric and technology-driven telemedicine solution. By combining cutting-edge features, secure data storage, and seamless integration of communication tools, Horizon empowers patients to receive personalized, convenient, and high-quality healthcare services from the comfort of their homes. The app marks a significant step forward in bridging the gap between patients and healthcare providers, making healthcare more accessible, efficient, and patient-centered.



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7.2.FUTURE SCOPE

The Horizon app has tremendous potential for future growth and expansion. Here are some of the key areas that can be explored to enhance the app's capabilities and provide even greater value to users:

- 1. Integration with wearable devices:** The app can be integrated with wearable devices such as fitness trackers, smartwatches, and remote monitoring devices. This would enable real-time tracking of vital signs, health data, and provide doctors with a more comprehensive view of the patient's health status.
- 2. AI-driven symptom analysis:** Incorporating artificial intelligence (AI) algorithms into the app can enable intelligent symptom analysis. By leveraging machine learning and natural language processing techniques, the app can provide preliminary assessments and recommendations based on the patient's reported symptoms, improving the efficiency and accuracy of diagnoses.
- 3. Prescription management:** Adding a prescription management feature would enable doctors to digitally prescribe medications and patients to conveniently access their prescriptions within the app. Integration with online pharmacies or delivery services can further streamline the medication procurement process.
- 4. Multilingual support:** Expanding language support within the app would ensure accessibility for a wider range of users, including those who are more comfortable communicating in languages other than English. This would enhance the app's reach and cater to diverse patient populations.
- 5. Collaborative care:** Facilitating seamless collaboration between healthcare providers can enhance the app's capabilities. Features such as secure messaging and file sharing among doctors, specialists, and other healthcare professionals can promote interdisciplinary care and improve patient outcomes.
- 6. Telemonitoring and chronic disease management:** Integrating telemonitoring functionalities would enable patients with chronic diseases to track their health parameters regularly and share the data with their healthcare providers. This would enable proactive management and personalized care for chronic conditions.
- 7. Enhanced data analytics:** Leveraging advanced data analytics techniques can provide valuable insights into patient demographics, health trends, and treatment outcomes. These insights can help healthcare providers optimize their services and improve overall patient care.


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8. **Telemedicine for mental health:** Expanding the app's capabilities to include mental health services can address the growing demand for remote mental health consultations and therapy sessions. Providing access to qualified mental health professionals through the app would help bridge the gap in mental healthcare services.

9. **Continuous user feedback and improvements:** Implementing a feedback system within the app would allow users to provide suggestions, report issues, and share their experiences. This feedback can help identify areas for improvement and guide future updates and enhancements.

10. **Expansion to global markets:** With the increasing acceptance and adoption of telemedicine globally, there is a significant opportunity to expand the Horizon app's reach to international markets. Adapting the app to comply with local regulations, languages, and healthcare systems would unlock new opportunities for growth and impact.

Overall, the future scope for the Horizon app is promising, with possibilities for integrating advanced technologies, expanding services, and catering to evolving user needs. By staying at the forefront of telemedicine innovation and continuously adapting to the changing healthcare landscape, the Horizon app can position itself as a leading platform in the field of remote healthcare delivery.



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OBJECTIVES:

- To understand the basic concepts of mobile computing.
- To learn the basics of mobile telecommunication system .
- To be familiar with the network layer protocols and Ad-Hoc networks.
- To know the basis of transport and application layer protocols.
- To gain knowledge about different mobile platforms and application development.

UNIT I INTRODUCTION 9

Introduction to Mobile Computing – Applications of Mobile Computing- Generations of Mobile Communication Technologies- Multiplexing – Spread spectrum -MAC Protocols – SDMA- TDMA- FDMA- CDMA

UNIT II MOBILE TELECOMMUNICATION SYSTEM 9

Introduction to Cellular Systems - GSM – Services & Architecture – Protocols – Connection Establishment – Frequency Allocation – Routing – Mobility Management – Security – GPRS/UMTS

– Architecture – Handover - Security

UNIT III MOBILE NETWORK LAYER 9

Mobile IP – DHCP – AdHoc– Proactive protocol-DSDV, Reactive Routing Protocols – DSR, AODV , Hybrid routing –ZRP, Multicast Routing- ODMRP, Vehicular Ad Hoc networks (VANET) –MANET Vs VANET – Security.

UNIT IV MOBILE TRANSPORT AND APPLICATION LAYER 9

Mobile TCP– WAP – Architecture – WDP – WTLS – WTP –WSP – WAE – WTA Architecture

UNIT V MOBILE PLATFORMS AND APPLICATIONS 9

Mobile Device Operating Systems – Special Constraints & Requirements – Commercial Mobile Operating Systems – Software Development Kit: iOS, Android, BlackBerry, Windows

Phone – MCommerce – Structure – Pros & Cons – Mobile Payment System – Security Issues

TOTAL 45 PERIODS**OUTCOMES:**

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

- Explain the basics of mobile telecommunication systems
- Illustrate the generations of telecommunication systems in wireless networks
- Determine the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network
- Explain the functionality of Transport and Application layers
- Develop a mobile application using android/blackberry/ios/Windows SDK

TEXT BOOKS:

1. Jochen Schiller, “Mobile Communications”, PHI, Second Edition, 2003.
2. Prasant Kumar Pattnaik, Rajib Mall, “Fundamentals of Mobile Computing”, PHI Learning Pvt.Ltd, New Delhi – 2012

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2. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, "Principles of Mobile Computing", Springer, 2003.
3. William.C.Y.Lee,“Mobile Cellular Telecommunications-Analog and Digital Systems”, Second Edition,TataMcGraw Hill Edition ,2006.
4. C.K.Toh, “AdHoc Mobile Wireless Networks”, First Edition, Pearson Education, 2002.

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5. Android Developers : <http://developer.android.com/index.html>
6. Apple Developer : <https://developer.apple.com/>
7. Windows Phone DevCenter : <http://developer.windowsphone.com>
8. BlackBerry Developer : <http://developer.blackberry.com>



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THYROID PREDICTION USING MACHINE LEARNING



A PROJECT REPORT

Submitted by

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MURALI K (311819205018)

in partial fulfillment for the award of the degree of

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ABSTRACT

Thyroid disease is a major cause of formation in medical diagnosis and in the prediction of, onset to which is a difficult axiom in medical research. Thyroid disease can affect everyone—men, women, children, adolescents, and the elderly. Thyroid disorders are detected by blood tests, which are notoriously difficult to interpret due to the enormous amount of data necessary to forecast results. For this reason, different machine learning algorithms are used to determine which one produces the best accuracy for predicting thyroid risk accurately. Hyperthyroidism and hypothyroidism are the two common diseases of the thyroid that releases thyroid hormones in regulating the rate of the body's metabolism. Data cleansing techniques were applied to make the data primitive enough for performing analytics to show the risk of patients obtaining thyroid. Machine learning plays a decisive role in the process of disease prediction and this paper handles the analysis and classification models that are being used in thyroid disease based on the information gathered from the dataset taken from the UCI machine learning repository. It is important to ensure a decent knowledge base that can be entrenched and used as a hybrid model in solving complex learning tasks, such as in medical diagnosis and prognostic tasks. It also proposed different machine-learning techniques and diagnoses for the prevention of the thyroid. The thyroid data set of the machine learning repository has been used from UCI knowledge.



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CHAPTER 7

CONCLUSION AND FUTURE WORK

Thyroid Prediction System using Machine Learning is a project idea that aims on being a smart and precise way to predict thyroid disease. The thyroid prediction system is a useful tool for diagnosing thyroid disorders. By analyzing patient data and using machine learning algorithms, the system can accurately predict whether a patient has a thyroid disorder and recommend appropriate treatment. However, there may be some limitations to the system that could be addressed in future work. For example, the system may not be able to account for all possible factors that could affect thyroid function, such as certain medications or environmental factors. Additionally, the system may not be able to provide a definitive diagnosis without further testing, which could be a limitation in some cases.

To improve the thyroid prediction system, future work could focus on incorporating additional data sources and refining the machine learning algorithms used to analyze the data. Additionally, it may be useful to compare the accuracy of the system to other diagnostic methods and evaluate its performance in different patient populations.

The objective was to give society an efficient and precise way of machine learning which can be used in applications aiming to perform disease detection and it could be developed further for the future as an android application for Thyroid patient. Image processing of ultrasonic scanning of thyroid images can be used to predict thyroid nodules and cancer and enhance the accuracy of the system by using different algorithms/techniques.

Overall, the thyroid prediction system has the potential to be a valuable tool in diagnosing thyroid disorders, but further research and development is needed to optimize its performance and address any limitations.

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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

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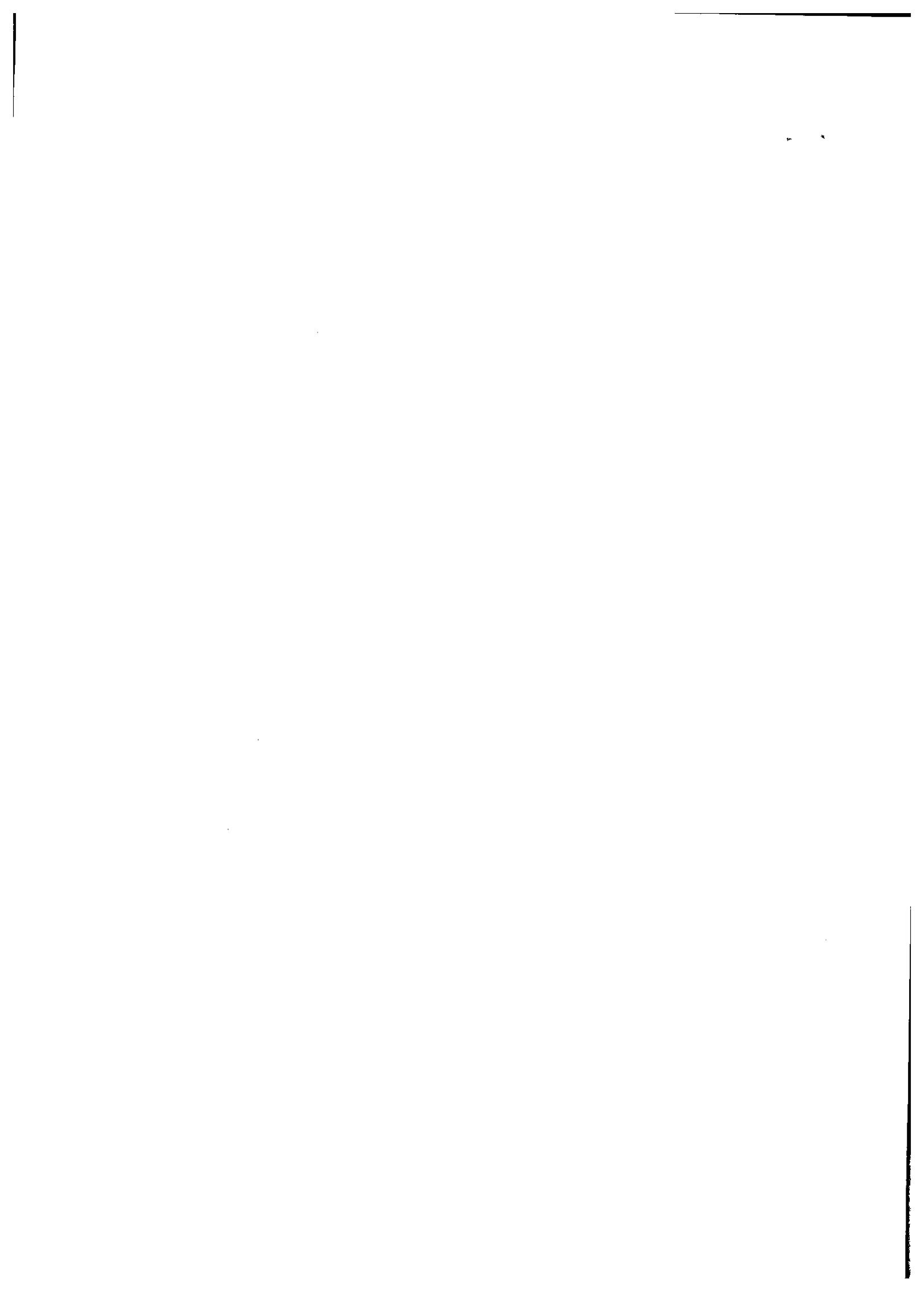
1. Tom M. Mitchell, "Machine Learning", McGraw-Hill Education (India) Private Limited, 2013.

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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Secure Data Sharing in IOT Through Proxy Re-Encryption on Blockchain

A PROJECT REPORT

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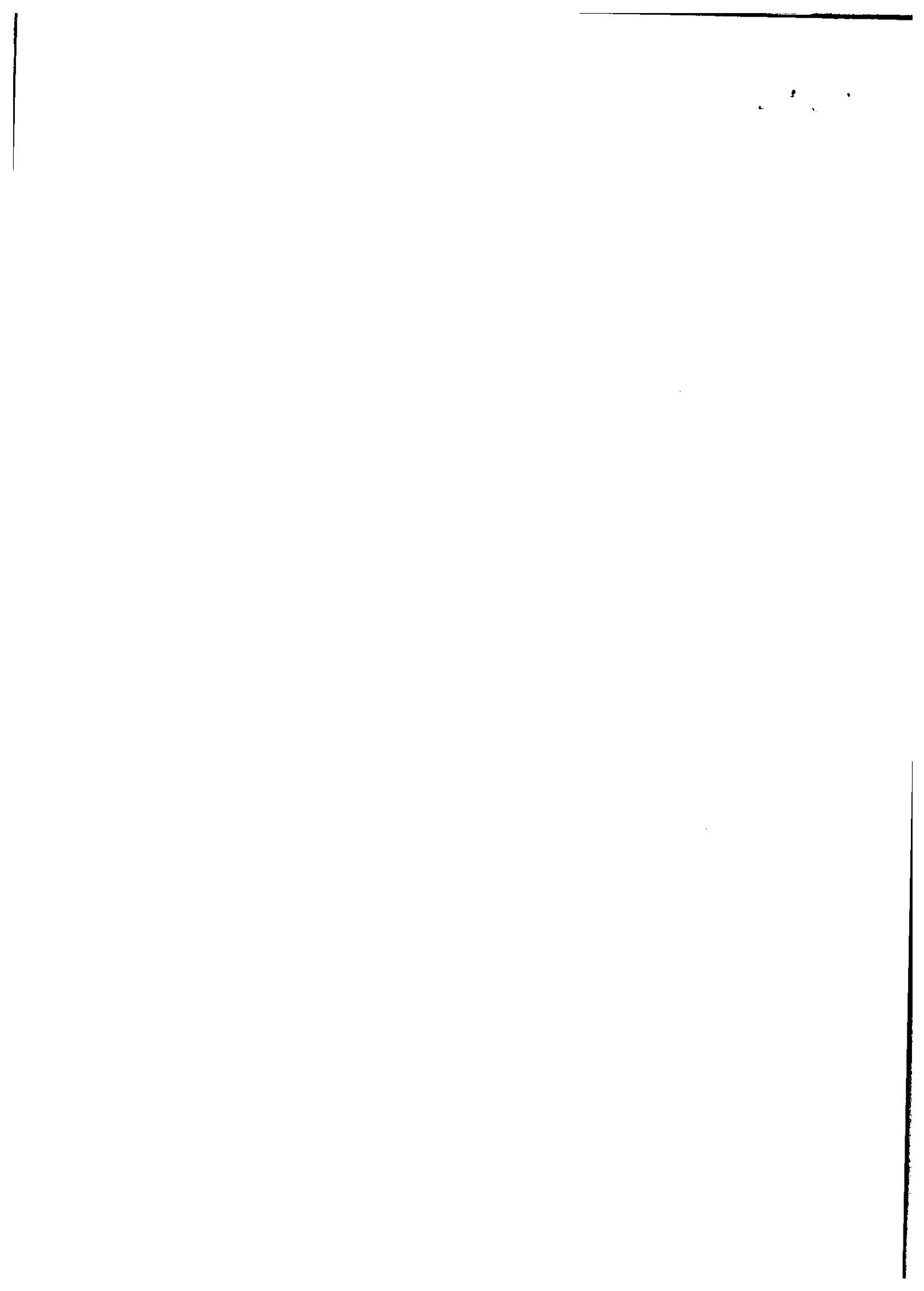


IoT & Blockchain

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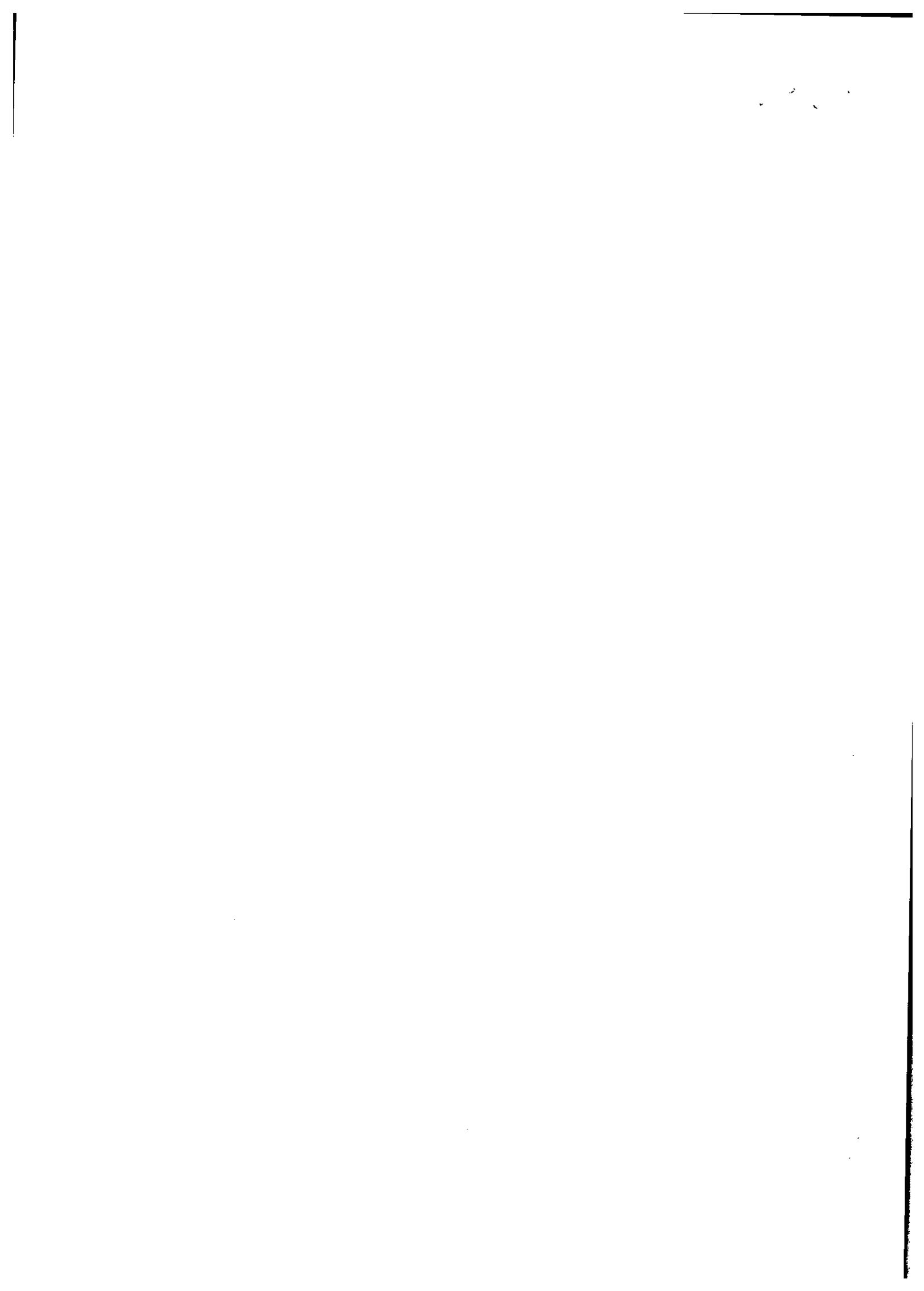
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ABSTRACT

The evolution of the Internet of Things has seen data sharing as one of its most useful applications in cloud computing. As eye-catching as this technology has been, data security remains one of the obstacles it faces since the wrongful use of data leads to several damages. In this project, a proxy re-encryption approach to secure data sharing in cloud environments was proposed. Data owners can outsource their encrypted data to the cloud using identity-based encryption, while proxy re- encryption construction will grant legitimate users access to the data. With the Internet of Things devices being resource-constrained, an edge device acts as a proxy server to handle intensive computations. Also, this system makes use of the features of information-centric networking to deliver cached content in the proxy effectively, thus improving the quality of service and making good use of the network bandwidth. Further, the proposed system model is based on blockchain, a disruptive technology that enables decentralization in data sharing. It mitigates the bottlenecks in centralized systems and achieves fine-grained access control to data. The security analysis and evaluation of our scheme show the promise of our approach in ensuring data confidentiality, integrity, and security.



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CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION

The emergence of the IoT has made data sharing one of its most prominent applications. To guarantee data confidentiality, integrity, and privacy, a secure identity-based PRE data-sharing scheme is proposed in a cloud computing environment. Secure data sharing is realized with IBPRE technique, which allows the data owners to store their encrypted data in the cloud and share them with legitimate users efficiently. Due to resource constraints, an edge device serves as the proxy to handle the intensive computations. The scheme also incorporates the features of ICN to proficiently deliver cached content, thereby improving the quality of service and making great use of the network bandwidth. Then, a blockchain-based system model is presented that allows flexible authorization on encrypted data. Finegrained access control is achieved, and it can help data owners achieve privacy preservation in an adequate way.

7.2 FUTURE ENHANCEMENT

This project can be extended in future by adding an anonymous authentication of IoT to perform more secure data transmission in the proposed work. In the future, the proposed system can be improved with an implementation on a different blockchain platform e.g. Hyperledger. The proposed architecture can be extended by adding a distributed cloud storage to make the system more scalable.



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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 Raspberry 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, Stamatias , 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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**“DIABETES MELLITUS PREDICTIVE ANALYSIS
SYSTEM USING MULTI-MODEL SUPERVISED TECHNIQUE”**

A PROJECT REPORT

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BONAFIDE CERTIFICATE

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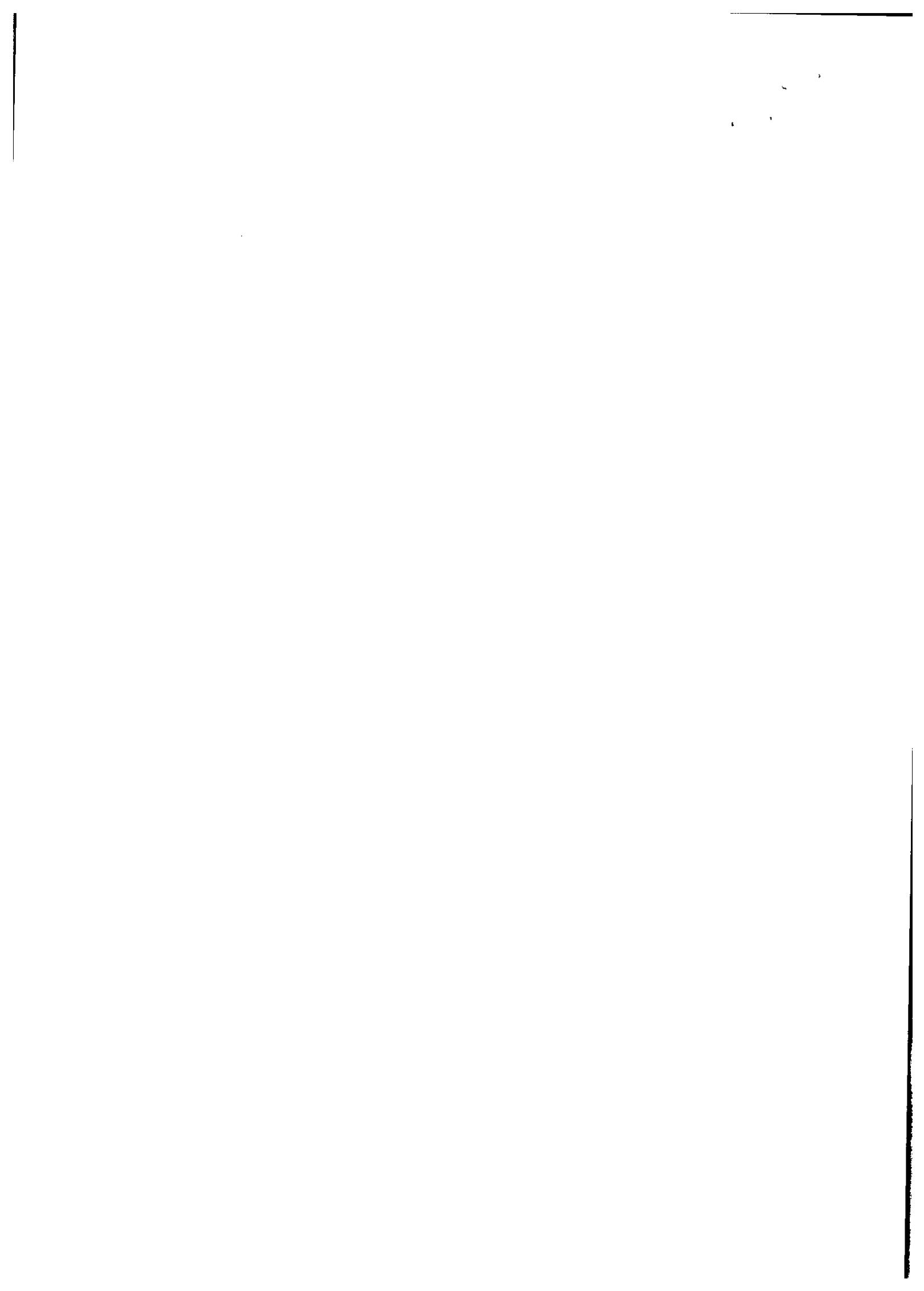
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ABSTRACT

Diabetes mellitus is one of the extremely life-threatening diseases because it contributes to other lethal diseases, i.e., heart, kidney, and nerve damage. Diabetes is a metabolic disorder that impairs an individual's body to process blood glucose, known as blood sugar. This disease is characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. Artificial intelligence plays an essential part in the healthcare industry by providing ease to healthcare professionals to analyze and diagnose medical data. Input is obtained in the form of numeric values for diabetes. Output results are acquired instantly in real-time. We will be using supervised Artificial intelligence algorithms, mainly Random Forest. Numerical Data is actually obtained from Kaggle and leveraged here. The whole architecture is run in cloud-based Google Colab. The existing systems are simple and effective but can be extremely inaccurate. Moreover, state-of-the-art methods are highly prone to impact. We propose an end-end application that predicts diabetes mellitus using distinct techniques related to Artificial intelligence. This cost-effective model leverages the random forest algorithm of supervised Artificial intelligence for diagnosis. The Advantages of the proposed system are that it could be the very first-of-its-kind, cost-efficient, and highly accurate application that provides complete end-to-end diagnosis and disease prediction. Also, it can fetch authentic data from the cloud and use it instantly to give quicker results. The proposed application is highly applicable in the classification, and diagnosis of diabetes diseases and is expected to become more important in medical practice shortly.



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User acceptance of the system is a key factor for the success of any system. The system under consideration is tested for user acceptance by constantly keeping in touch with prospective system and user at the time of developing and making changes whenever required. This is done in regards to the following points.

- Input screen design.
- Output screen design.

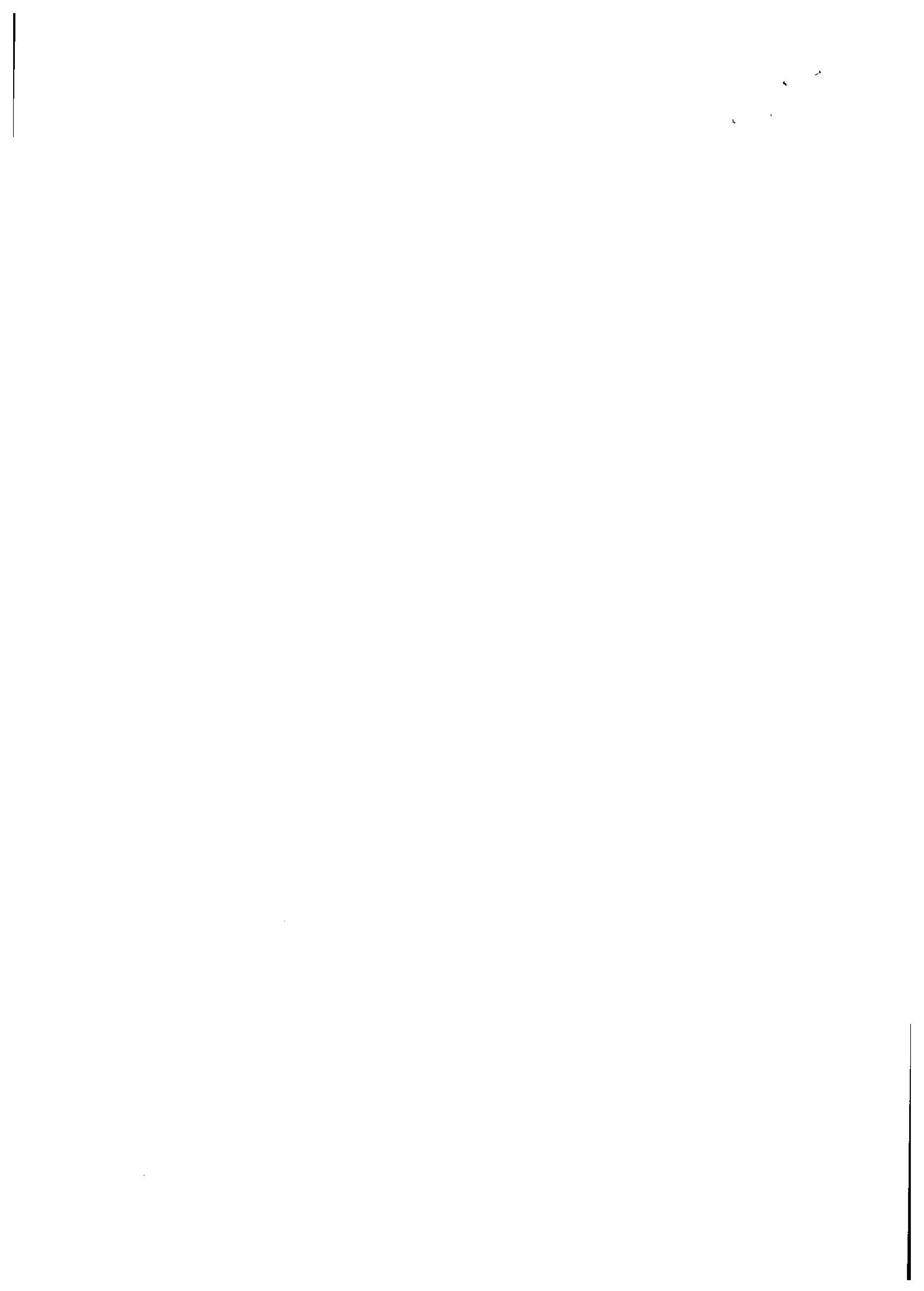
9.CONCLUSION

Accurate classification of diabetes is a fundamental step towards diabetes prevention and control in healthcare. However, early and onset identification of diabetes is



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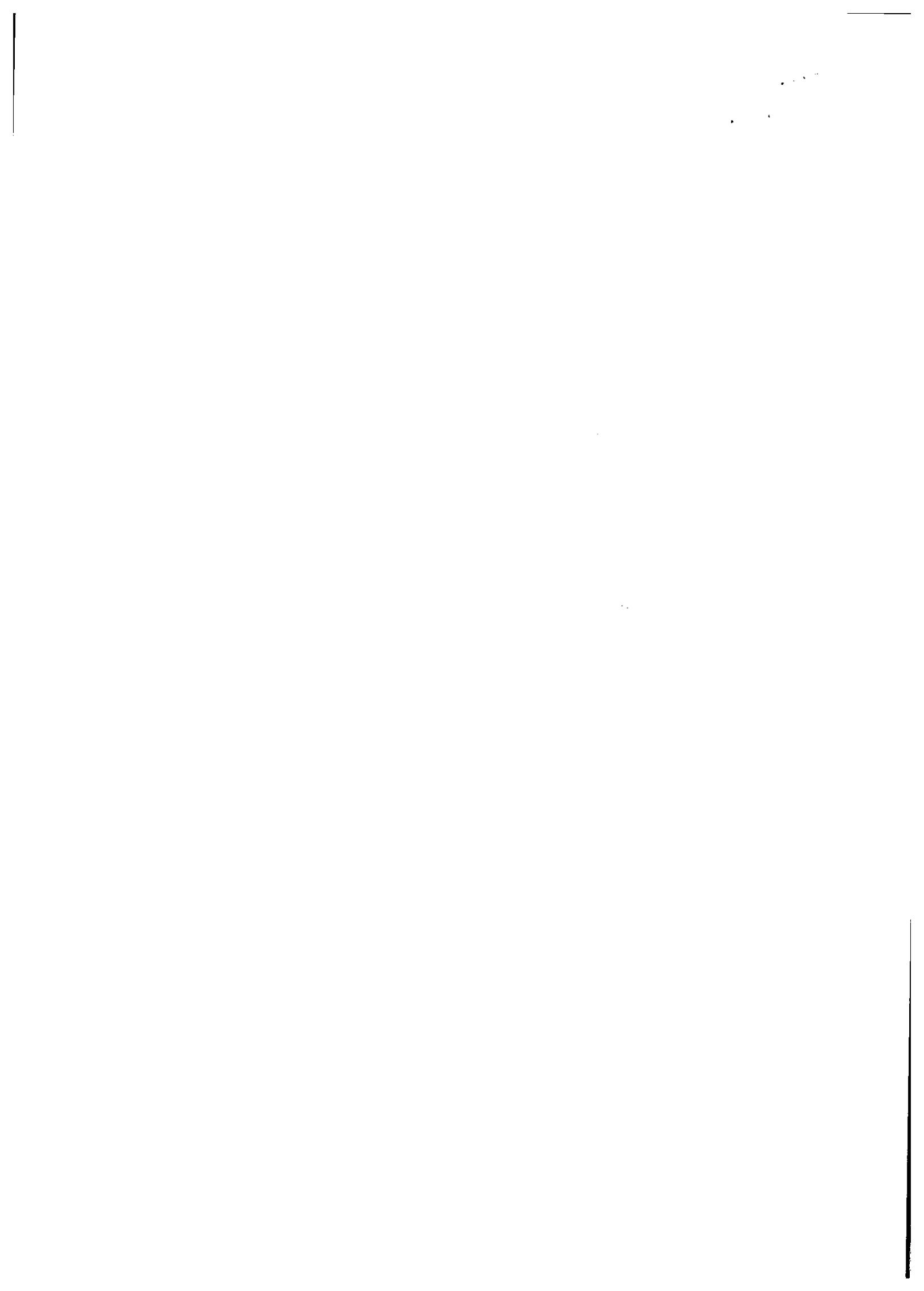
much more beneficial in controlling diabetes. Random Forest classifier was applied to the dataset obtained from Kaggle.

Our proposed methodology helps to improve the accuracy of diagnosis and is greatly helpful for further treatment. It also predicts that age, education, BMI, systolic BP, diastolic BP, direct cholesterol, and total cholesterol are statistically significant factors for diabetes disease at a critical level of significance. In future enhancements, these methods will be applied to other medical domains for prediction, such as for different types of cancer, psoriasis, and Parkinson's disease. Other attributes including physical inactivity, family history of diabetes, and smoking habit, are also planned to be considered in the future for the diagnosis of diabetes.



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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

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UNIT II NEURAL NETWORKS AND GENETIC ALGORITHMS 9

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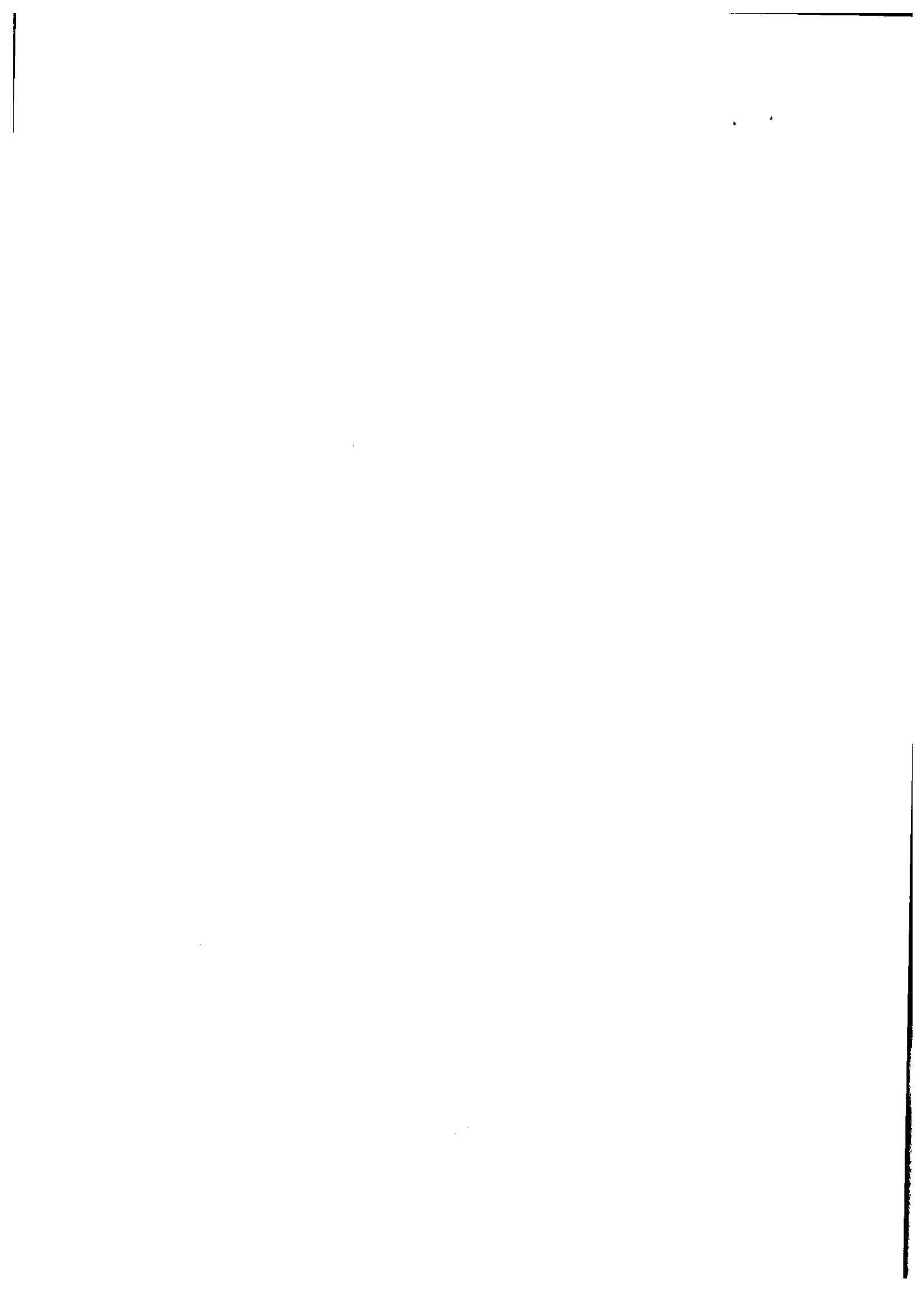
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HUMAN ANOMALY DETECTION WITH BOUNDING BOX METHODOLOGY

A PROJECT REPORT

Submitted by

AMEER SHERIFF A (311819205001)
MOHAMED FAIZAL KHAN M(311819205015)
SHAHEENAH M (311819205027)

in partial fulfilment for the award of the degree of

BACHELOR OF TECHNOLOGY

in

INFORMATION TECHNOLOGY

MOHAMMED SATHAK A.J COLLEGE OF ENGINEERING

SIRUSERI, CHENNAI – 603 103



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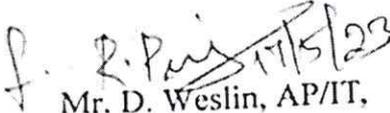
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Chennai - 603103.

MAY 2023

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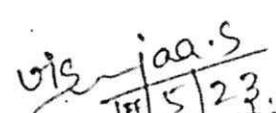
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Certified that this project report "Human Anomaly Detection with Bounding Box Methodology" is the bonafide work of AMEER SHERIFF A (311819205001), MOHAMED FAIZAL KHAN M (311819205015), and SHAHEENAH M (311819205027) who carried out the project under my supervision.

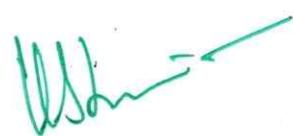
 17/5/23
Mr. D. Weslin, AP/IT, Mr. Karthikeyan, AP/IT HEAD OF THE
DEPARTMENT, SUPERVISOR,

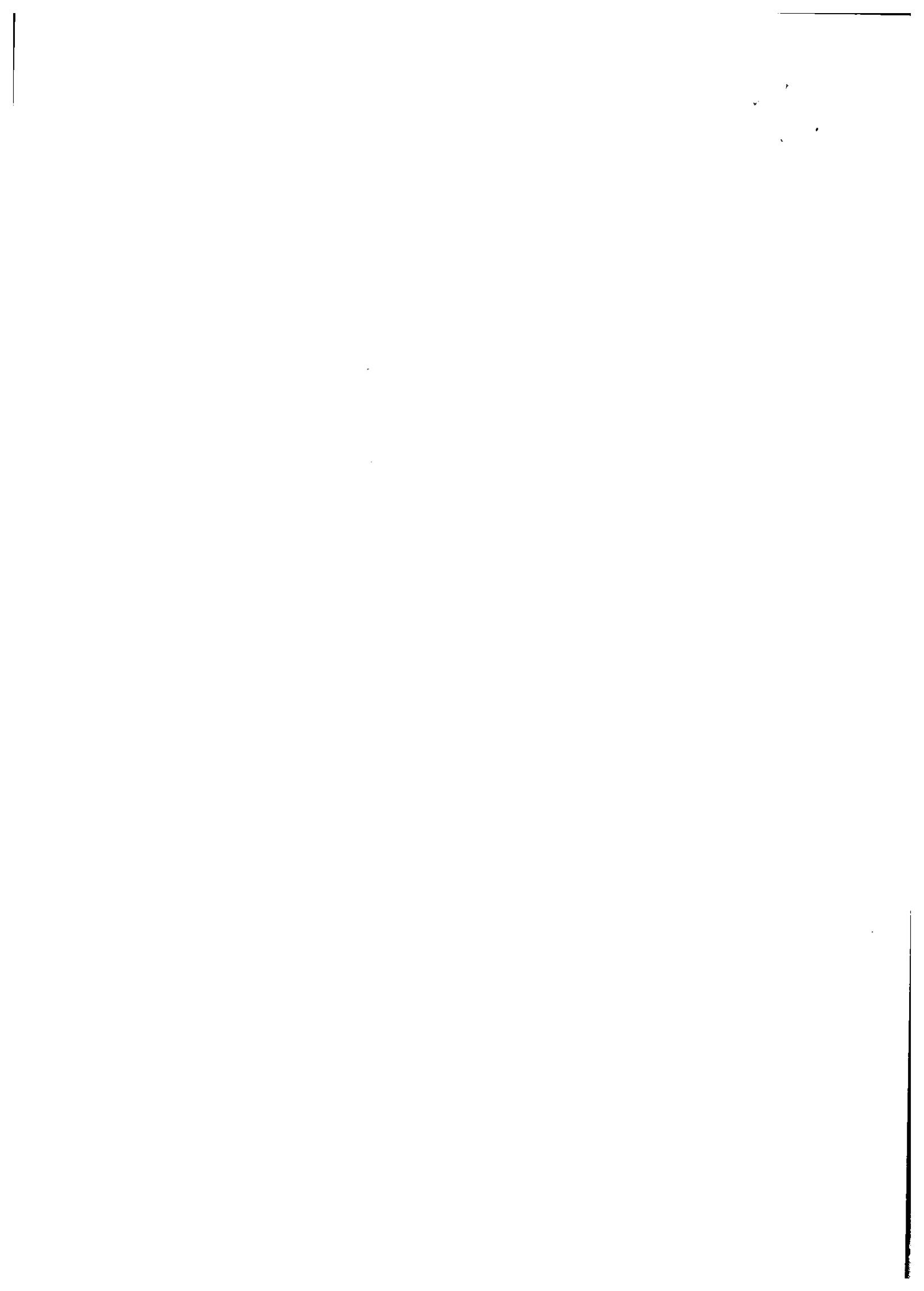
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Submitted for the project viva voce on 17/05/2023.

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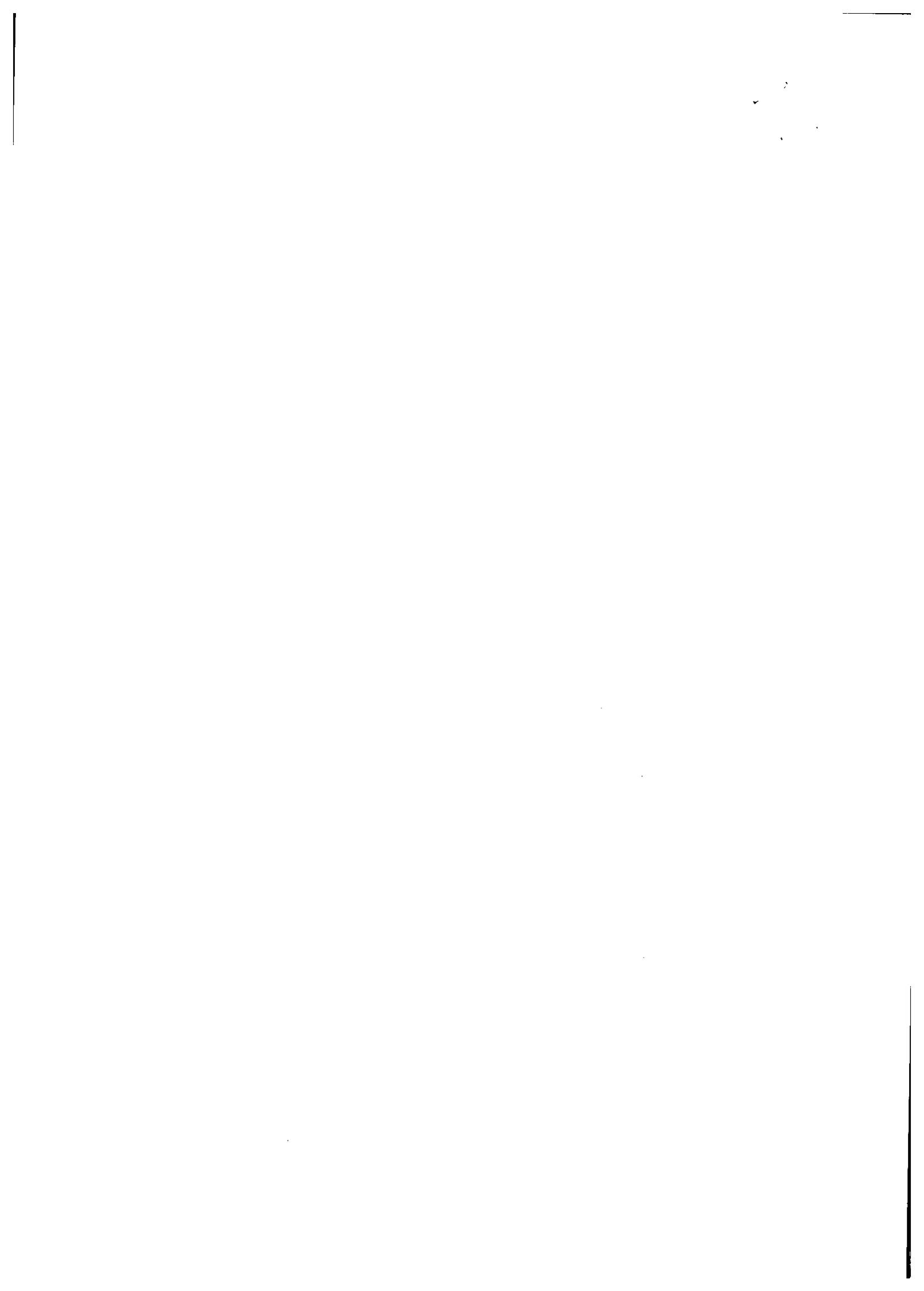


ABSTRACT

Human abnormal activity recognition has gained significant attention in recent years due to its potential applications in various fields, including healthcare, security, and entertainment. The ability to detect and classify abnormal activities in real-time can help in providing timely interventions and ensuring the safety of individuals. In this paper, we provide an overview of the recent advancements in human abnormal activity recognition. We discuss the different types of sensor data, such as accelerometer and gyroscope data, and video data used in this area of research. We also highlight the challenges faced in developing accurate and robust models for human abnormal activity recognition. One of the major challenges in human abnormal activity recognition is the lack of labeled data, which makes it difficult to train models that generalize well to different scenarios. To overcome this challenge, recent research has focused on using transfer learning and few-shot learning techniques. We also discuss the potential applications of human abnormal activity recognition in various fields, such as fall detection in elderly care, identifying abnormal behaviors in public spaces for security purposes, and enhancing immersive experiences in virtual reality. Overall, human abnormal activity recognition is an important area of research that has the potential to make a significant impact in various fields. Further research in this area is necessary to develop more accurate and robust models that can be deployed in real-world scenarios.



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7. CONCLUSION

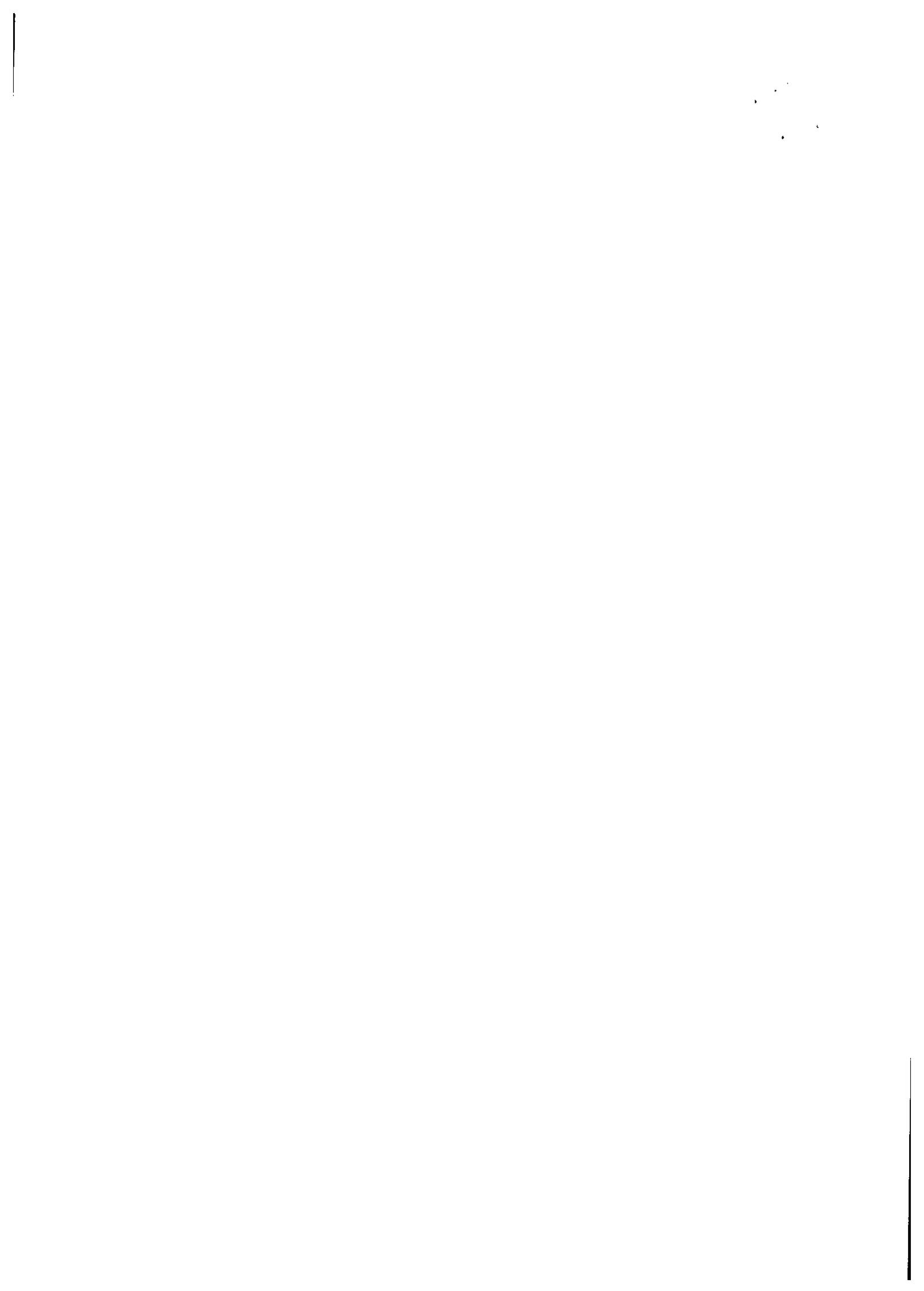
7.1 CONCLUSION

Human abnormal activity recognition is an important area of research that has significant applications in fields such as healthcare, security, and entertainment. The ability to automatically detect and classify abnormal activities in real-time can help in providing timely interventions and improving the safety of individuals. Recent advancements in machine learning and computer vision have led to the development of robust and accurate models for human abnormal activity recognition. These models use sensor data, such as accelerometer and gyroscope data, along with video data to classify human activities. One of the challenges in human abnormal activity recognition is the lack of labeled data, which makes it difficult to train models that generalize well to different scenarios.

However, recent research has shown promising results using transfer learning and few-shot learning techniques. Overall, human abnormal activity recognition has the potential to make a significant impact in various fields, and further research in this area is necessary to develop more accurate and robust models.



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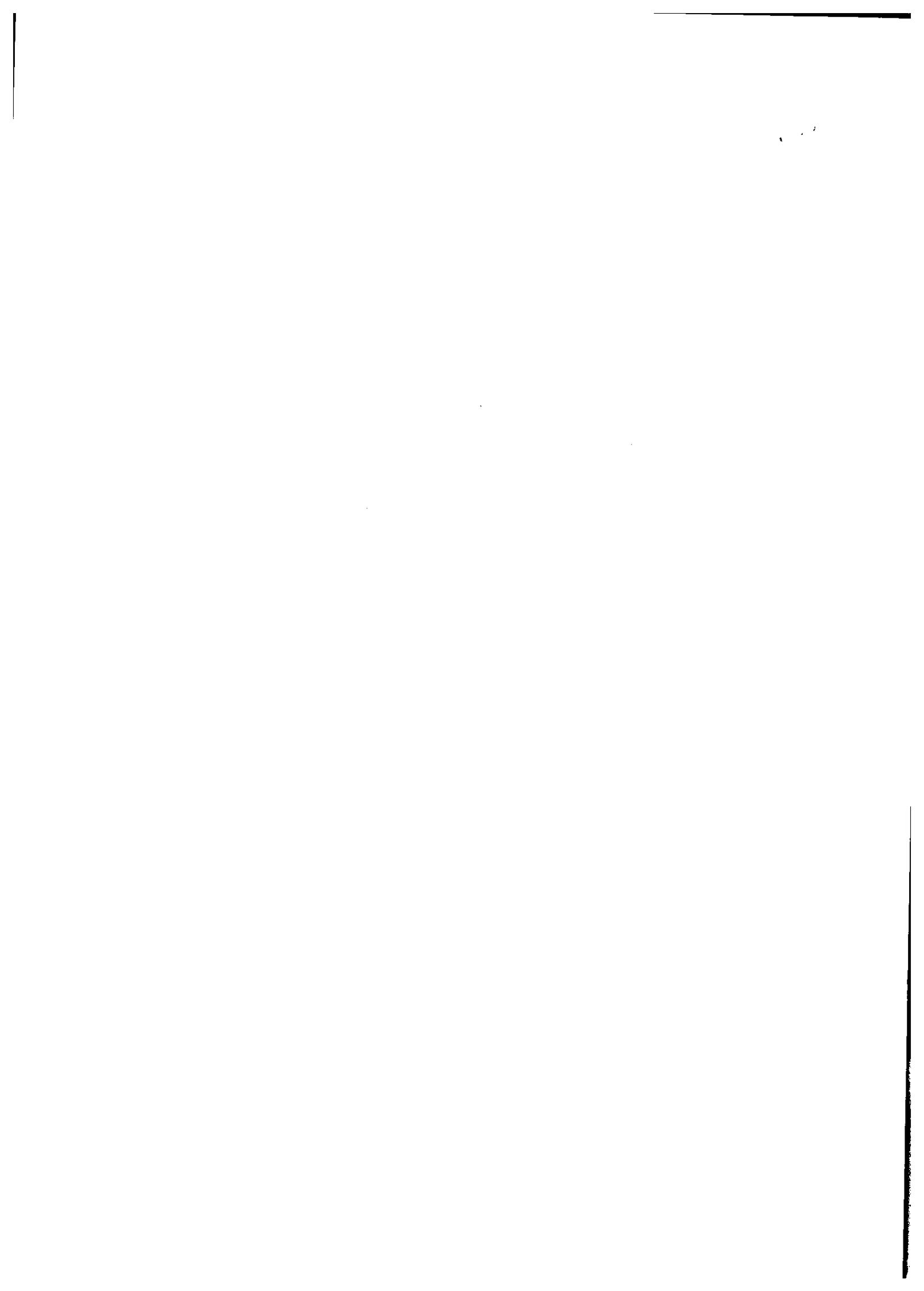
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Bitcoin Heist Ransomware Attack Prediction Using DS and ML

A PROJECT REPORT

Submitted by

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LUBNA FATHIMA N (311819205009)
SUGAIEL FATHIMA A (311819205030)

in partial fulfilment for the award of the degree of

BACHELOR OF TECHNOLOGY

in

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BONAFIDE CERTIFICATE

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G. Pandiyan
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Mr. G. Pandiyan AP/CSE,
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ABSTRACT

Ransomware attacks are emerging as a major source of malware intrusion in recent times. While so far ransomware has affected general-purpose adequately resourceful computing systems. Many ransomware prediction techniques are proposed but there is a need for more suitable ransomware prediction techniques for machine learning techniques. This paper presents an attack of ransomware prediction technique that uses for extracting information features in Artificial Intelligence and Machine Learning algorithms for predicting ransomware attacks. The application of the data science process is applied for getting a better model for predicting the outcome. Variable identification and data understanding is the main process of building a successful model.

Different machine learning algorithms are applied to the pre-processed data and the accuracy is compared to see which algorithm performed better other performance metrics like precision, recall, f1-score are also taken in consideration for evaluating the model. The machine learning model is used to predict the ransomware attack outcome



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8.1 CONCLUSION

The analytical process started from data cleaning and processing, missing value, exploratory analysis and finally model building and evaluation. The best accuracy on public test set of higher accuracy score algorithm will be found out. The founded one is used in the application which can help to find the Bitcoin Heist ransomware attack.

The most accurate algorithms will be found in the open process. A program that helps you find a bitcoin heist with the first program created.

Monitoring computer systems and networks for unauthorized access, attacks, and other harmful activity is a crucial component of intrusion detection, which is part of cyber security. Intrusion detection seeks to minimize the effects of cyber risks and safeguard the confidentiality, integrity, and accessibility of data by detecting security occurrences and taking immediate action. The Initial data preparation and processing were followed by missing value analysis, exploratory analysis, and lastly model construction and evaluation. The algorithm with the highest accuracy score will be tested globally to see which one has the best accuracy. In the program, which can assist in identifying the sort of intrusions, the founded one is employed.

8.2 FUTURE WORK

- ❖ Deploying the project in the cloud.
- ❖ To optimize the work to implement in the IOT system.



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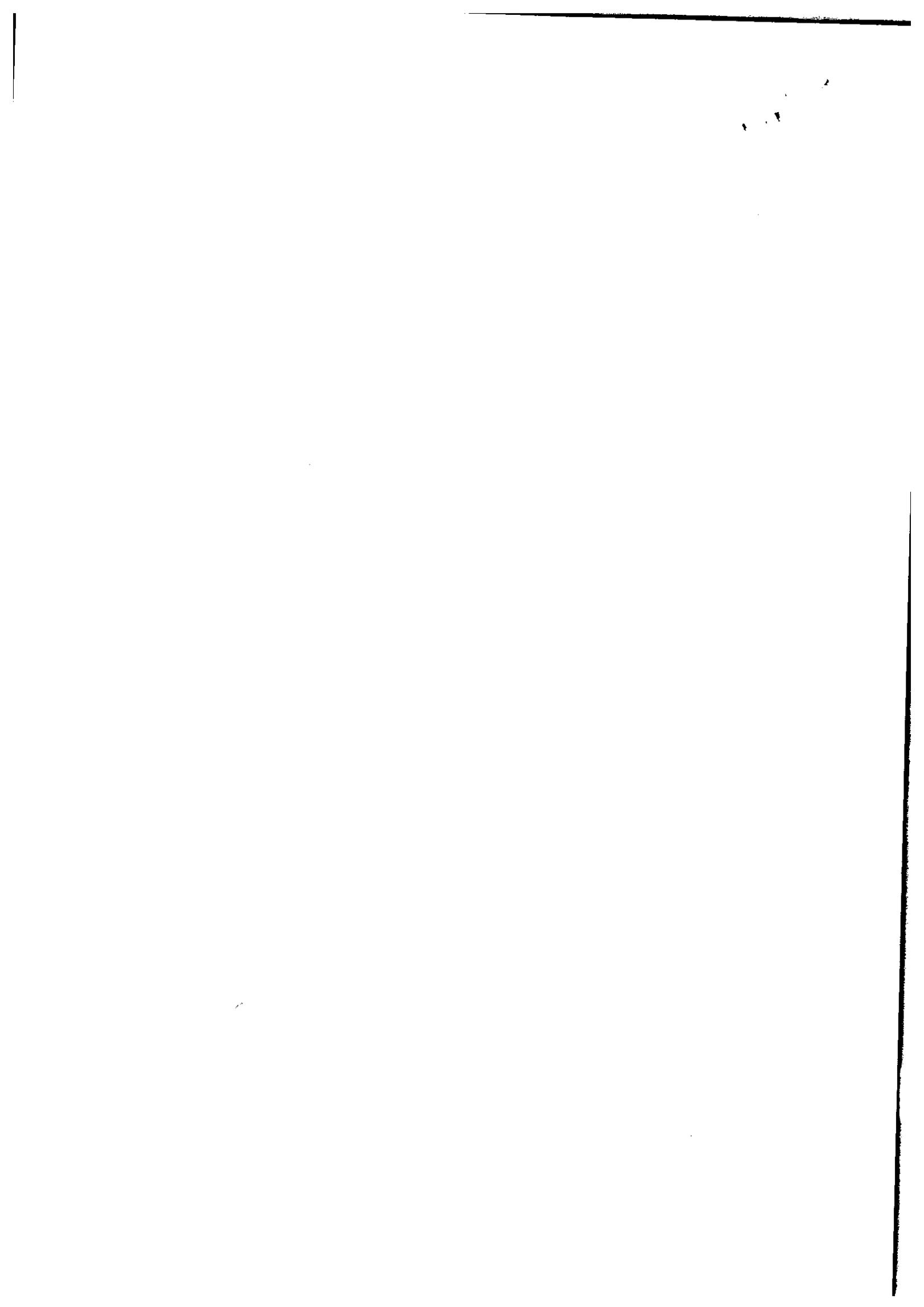
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Fire Detection Using Image Processing Techniques

A PROJECT REPORT

Submitted by

MOHAMED MOOSA M (311819205011)

MUHU RAJA M (311819205019)

VIGNESH S (311819205031)

In partial fulfilment for the award of the degree

of

BACHELOR OF TECHNOLOGY

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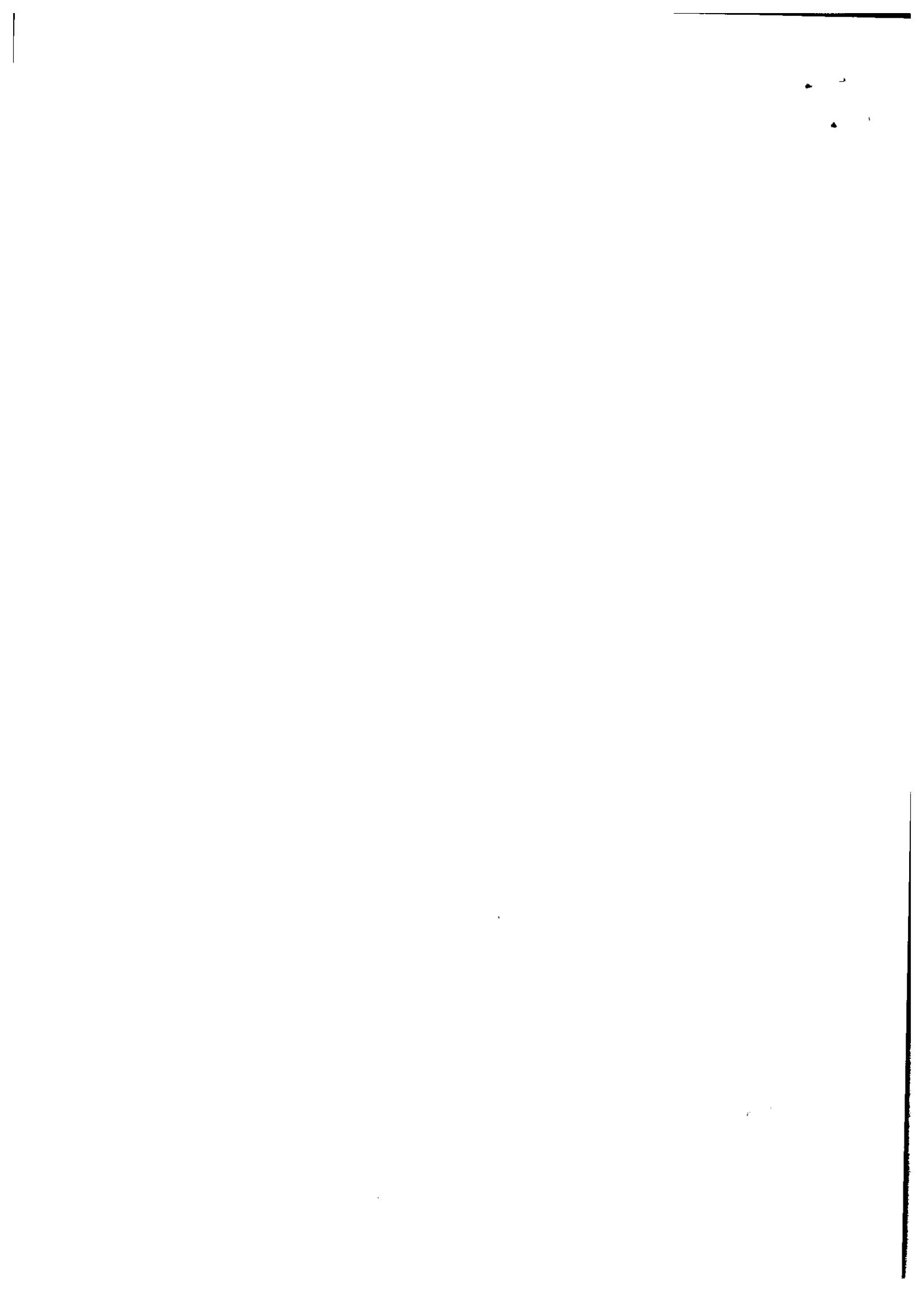
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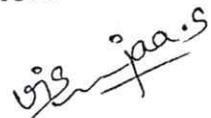


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BONAFIDE CERTIFICATE

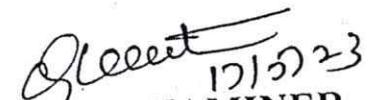
Certified that this project report "Fire Detection Using Image Processing Techniques" is the bonafide work of "MOHAMED MOOSA M (311819205011) MUHU RAJA M (311819205019) VIGNESH S (311819205031)" who carried out the project work under my supervision.


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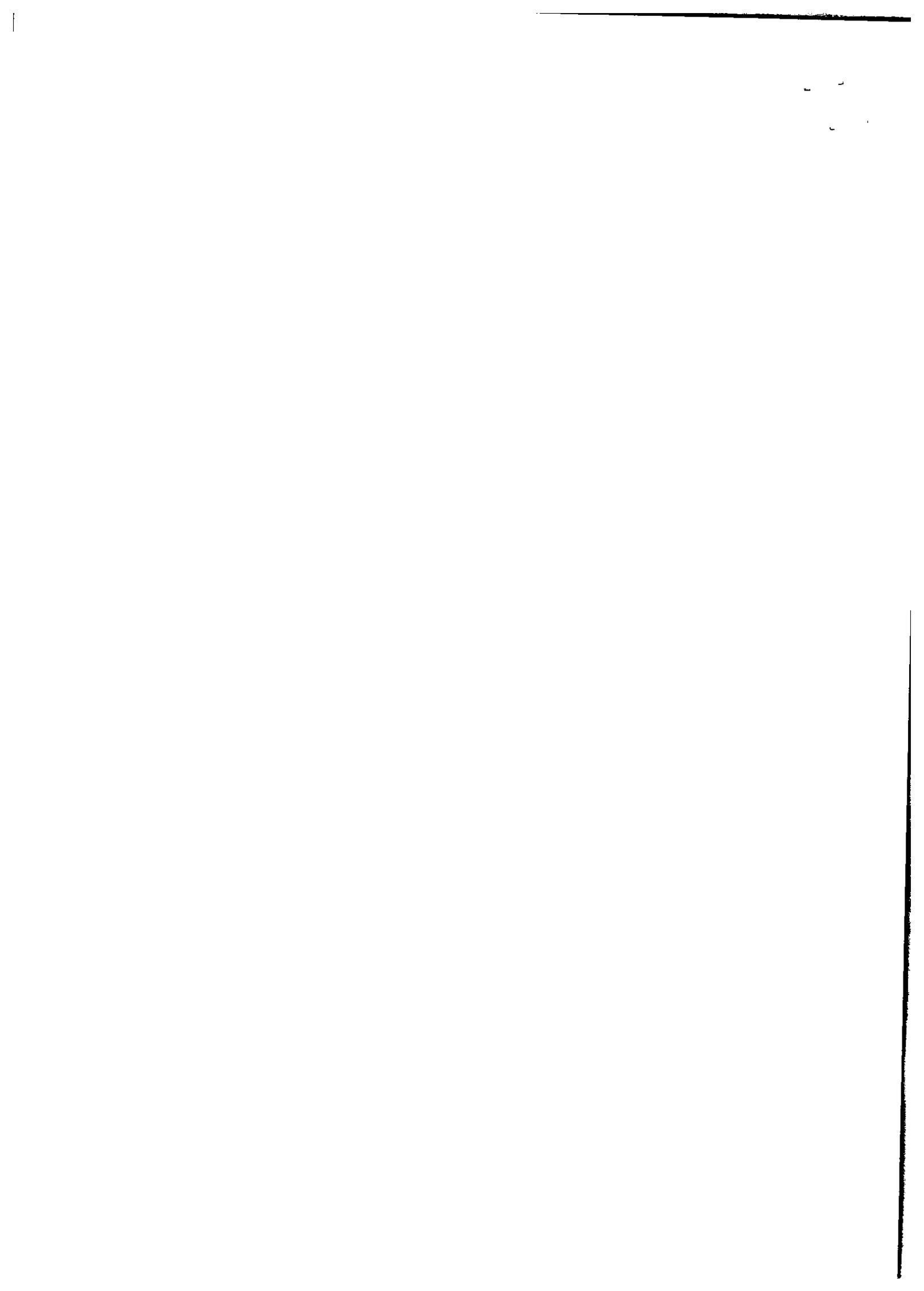

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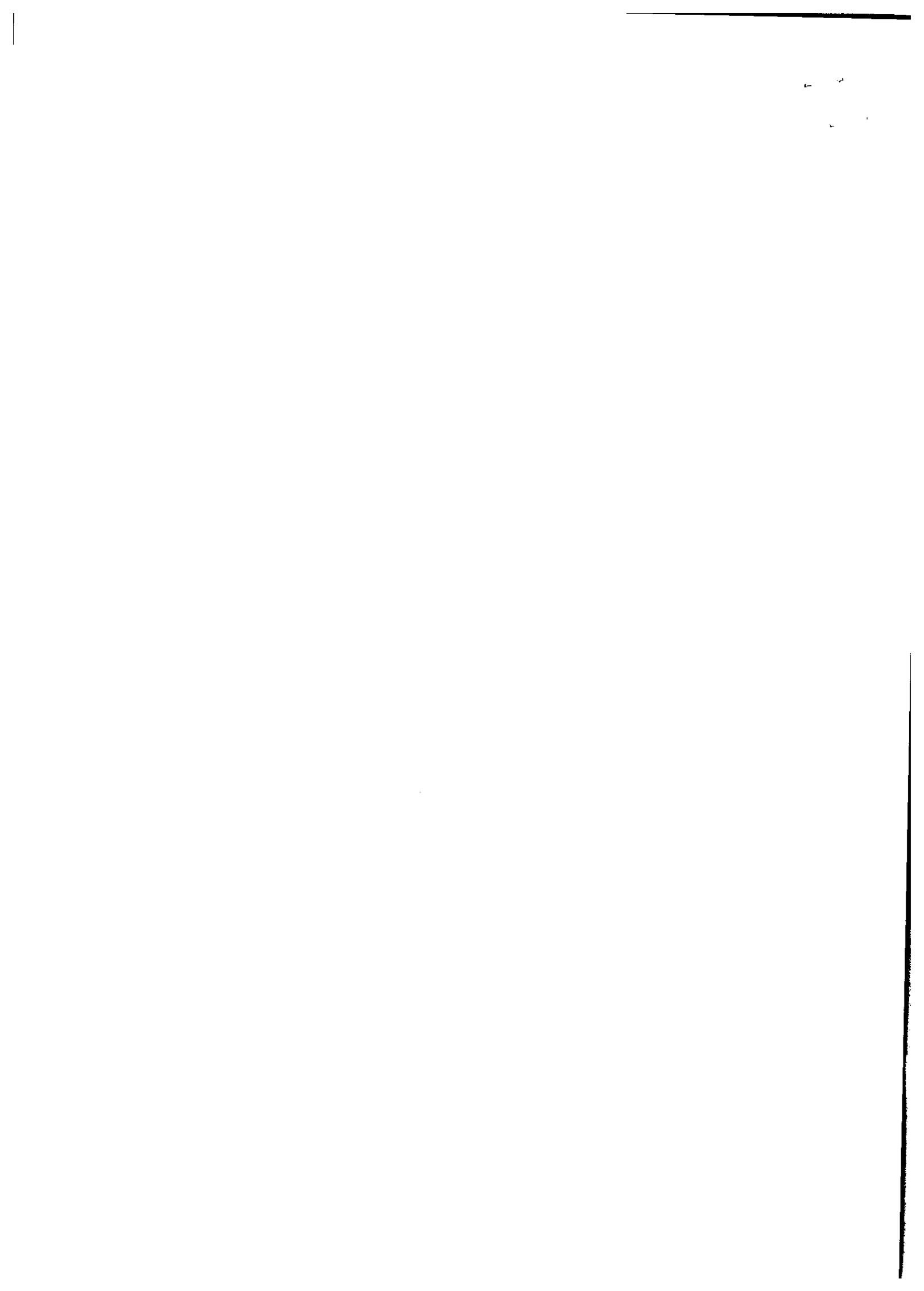
ABSTRACT

Aiming at the problems of leakage alarms and false alarms in fire detection systems, this paper explores the commonality and characteristics of its development process through in-depth analysis of typical fire detection and fire alarm modes at home and abroad and effectively summarizes the process of building fire alarms. In the case of fully grasping the principles of fire alarm and related policy protection, find out the appropriate development mode of fire alarm. At the same time, it can also study the perspectives of the government, the market, and the public, according to the needs of the market, it can be driven by industry and technological innovation can be used as a strong support for the development of fire alarm. Finally, the results of example analysis show that: using blockchain, this paper can effectively obtain high-precision fire detection and fire alarm target analysis results, and meet the needs of real-time analysis of fire detection and fire alarm analysis. Experiments show that the system can detect fires correctly and quickly, and identify interference sources such as fluorescent lamps and alcohol lamps. It has strong interference and good economic benefits.



PRINCIPAL

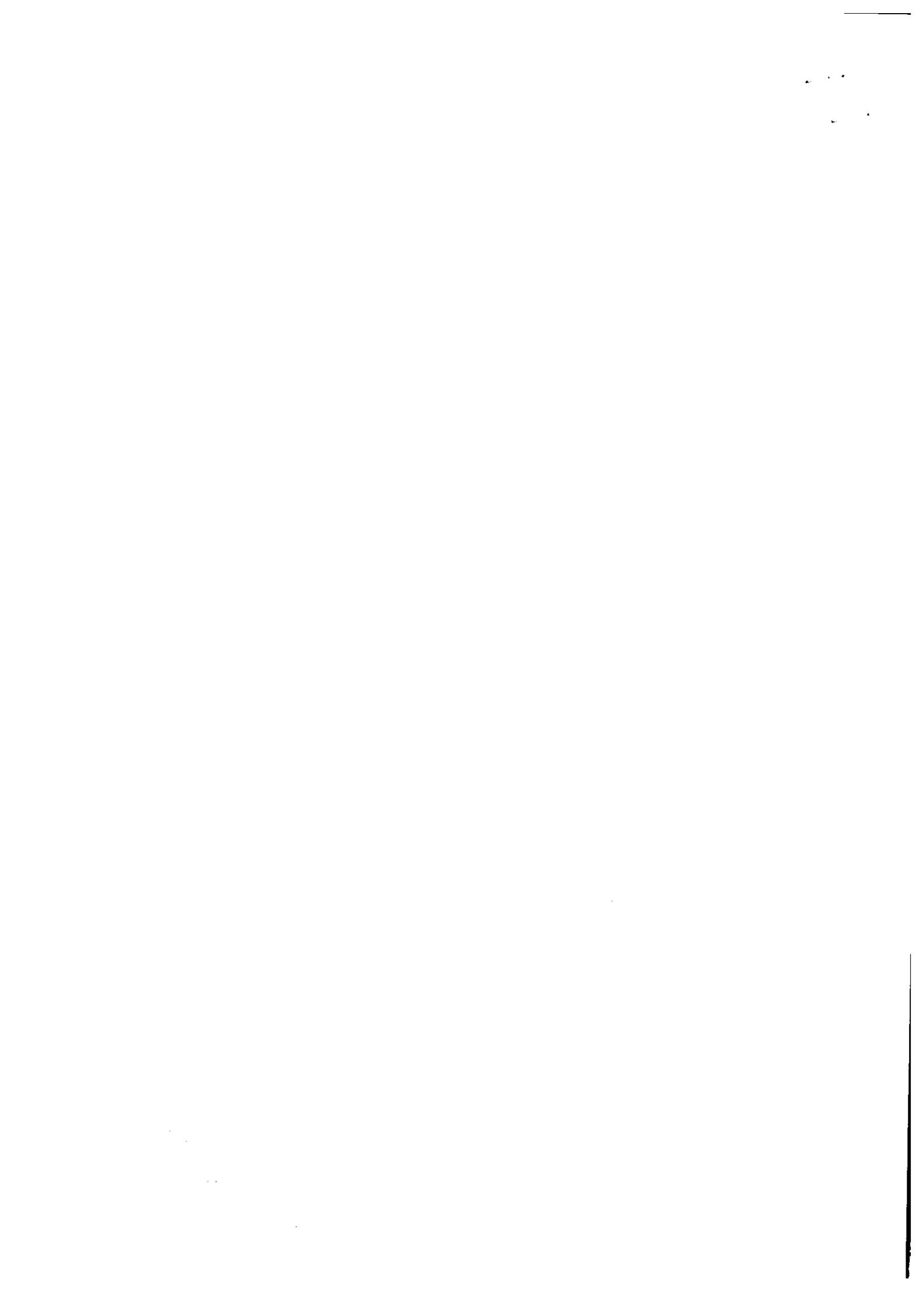
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No.34, Rajiv Gandhi Salai (O.M.V.)
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7 Conclusion

The project aimed to detect fire with a different approach rather than using an existing system. Currently, systems like a smoke detector and sprinkler water discharge systems are used, which are very useful and work at its best. But there are certain limitations to these systems. The thesis is conducted to optimize the current system. As technology is getting better and better as to keep it up with the technology and to minimize the limitations also, the new system has created.

By using image processing technology for detecting the fire, these limitations can be reduced because in this system camera acts like a human eye, as it detects a fire, the video is captured, and the image is processed using the software alert user. Thanks to Raspberry Pi, because of the size, cost-effectiveness, simplicity, and portability, it can be used everywhere. The prototype successfully detects fire. The thesis gives the review analysis,





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



DEPARTMENT OF INFORMATION TECHNOLOGY

ACADEMIC YEAR: 2022-2023

CONSOLIDATED INTERNSHIP STUDENTS LIST

S.No	Name of the Student	Name of the Organization	Date ,Period	Related Subject
1	S Dwaraka	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
2	P Manikandan	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
3	G Vengadesan	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
4	R Kalaiselvan	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
5	J Mohamed Asil	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
6	M.S Mohamed Yasir	Lenovo	18-08-2022 to 31-08-2022	Digital Principles and Computer Organization
7	V Prajesh Ram	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
8	Basurdeen Ahmed	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
9	Aadhil Hathim	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
10	Mohamed Samsudeen	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
11	B Lokesh	Lenovo	18.8.2022 to 31.8.2022	Digital Principles and Computer Organization
12	Aadhil Hathim	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
13	J Abdul Basith Ahmed	Thermodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
14	A Akshaya	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development

15	M Dhanusiya	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
16	K Durga Devi	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
17	J.S Dwaraka	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
18	M Ganapathi	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
19	R Harish	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
20	Junaith Akther	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
21	R.Kalai Selvan	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
22.	P.Manikandan	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
23	H Mohamed Harsath	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
24	M Mohamed mujamil	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
25	U Mohamed Farhaan	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
26	M.Mugilan	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
27	S H .Mohamed Hafiz	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
28	N.Nishad Nazeer	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
29	G.Nithyasree	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
30	V.Prajesh Ram	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
31	B.Prarthana	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
32	A.Rehana Khanm	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
33	M J .Syed Ahemed Ifthikar	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development
34	Shameel Ahamed	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
35	S.Sri Balaji	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential

36	S.Srithar	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
37	M.Sumesh	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
38	G.Vengadesan	Theromodyn Edutech	05.07.2023 to 29.07.2023	Web Essential
39	Mohamed Kalith	Zoho Tech	03.07.2023 to.20.07.2023	Full Stack Web Development

D. Lalw
HOD-IT

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

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC

Introduction to Sequential Circuits – Flip-Flops – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design – Moore/Mealy models, state minimization, state assignment, circuit implementation - Registers – Counters.

UNIT III COMPUTER FUNDAMENTALS

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

UNIT IV PROCESSOR

Instruction Execution – Building a Data Path – Designing a Control Unit – Hardwired Control, Microprogrammed Control – Pipelining – Data Hazard – Control Hazards.

UNIT V MEMORY AND I/O

Memory Concepts and Hierarchy – Memory Management – Cache Memories: Mapping and Replacement Techniques – Virtual Memory – DMA – I/O – Accessing I/O: Parallel and Serial Interface – Interrupt I/O – Interconnection Standards: USB, SATA.

COURSE OUTCOMES:

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

CO1 : Design various combinational digital circuits using logic gates

CO2 : Design sequential circuits and analyze the design procedures

CO3 : State the fundamentals of computer systems and analyze the execution of an instruction

CO4 : Analyze different types of control design and identify hazards

CO5 : Identify the characteristics of various memory systems and I/O communication

TOTAL:75 PERIODS

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CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MANIKANDAN P** student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **18.05.2022** to **31.08.2022**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.

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

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC

Introduction to Sequential Circuits – Flip-Flops – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design – Moore/Mealy models, state minimization, state assignment, circuit implementation - Registers – Counters.

UNIT III COMPUTER FUNDAMENTALS

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

UNIT IV PROCESSOR

Instruction Execution – Building a Data Path – Designing a Control Unit – Hardwired Control, Microprogrammed Control – Pipelining – Data Hazard – Control Hazards.

UNIT V MEMORY AND I/O

Memory Concepts and Hierarchy – Memory Management – Cache Memories: Mapping and Replacement Techniques – Virtual Memory – DMA – I/O – Accessing I/O: Parallel and Serial Interface – Interrupt I/O – Interconnection Standards: USB, SATA.

COURSE OUTCOMES:

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

- CO1 : Design various combinational digital circuits using logic gates
- CO2 : Design sequential circuits and analyze the design procedures
- CO3 : State the fundamentals of computer systems and analyze the execution of an instruction
- CO4 : Analyze different types of control design and identify hazards
- CO5 : Identify the characteristics of various memory systems and I/O communication

TOTAL:75 PERIODS

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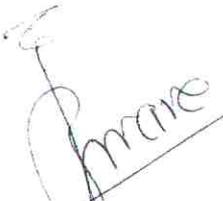
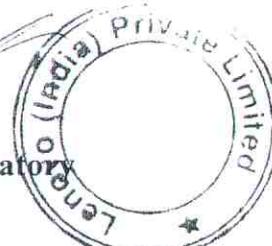
CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. VENGADESAN G** student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **18.08.2022** to **31.08.2022**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.


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

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC

Introduction to Sequential Circuits – Flip-Flops – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design – Moore/Mealy models, state minimization, state assignment, circuit implementation - Registers – Counters.

UNIT III COMPUTER FUNDAMENTALS

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

UNIT IV PROCESSOR

Instruction Execution – Building a Data Path – Designing a Control Unit – Hardwired Control, Microprogrammed Control – Pipelining – Data Hazard – Control Hazards.

UNIT V MEMORY AND I/O

Memory Concepts and Hierarchy – Memory Management – Cache Memories: Mapping and Replacement Techniques – Virtual Memory – DMA – I/O – Accessing I/O: Parallel and Serial Interface – Interrupt I/O – Interconnection Standards: USB, SATA.

COURSE OUTCOMES:

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

- CO1 : Design various combinational digital circuits using logic gates
- CO2 : Design sequential circuits and analyze the design procedures
- CO3 : State the fundamentals of computer systems and analyze the execution of an instruction
- CO4 : Analyze different types of control design and identify hazards
- CO5 : Identify the characteristics of various memory systems and I/O communication

TOTAL:75 PERIODS


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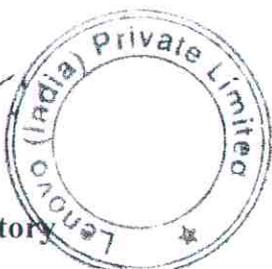
This is to certify that **Mr. DWARAKA S** student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **18.08.2022** to **31.08.2022**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.


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Fax: 60 415 2659 438

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This is to certify that **Mr. KALAISELVAN R** student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **18.08.2022** to **31.08.2022**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

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PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No. 24, Bani Gandhi Salai (O.U.R)
SIPCOT - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC

Introduction to Sequential Circuits – Flip-Flops – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design – Moore/Mealy models, state minimization, state assignment, circuit implementation - Registers – Counters.

UNIT III COMPUTER FUNDAMENTALS

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

UNIT IV PROCESSOR

Instruction Execution – Building a Data Path – Designing a Control Unit – Hardwired Control, Microprogrammed Control – Pipelining – Data Hazard – Control Hazards.

UNIT V MEMORY AND I/O

Memory Concepts and Hierarchy – Memory Management – Cache Memories: Mapping and Replacement Techniques – Virtual Memory – DMA – I/O – Accessing I/O: Parallel and Serial Interface – Interrupt I/O – Interconnection Standards: USB, SATA.

COURSE OUTCOMES:

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

CO1 : Design various combinational digital circuits using logic gates

CO2 : Design sequential circuits and analyze the design procedures

CO3 : State the fundamentals of computer systems and analyze the execution of an instruction

CO4 : Analyze different types of control design and identify hazards

CO5 : Identify the characteristics of various memory systems and I/O communication

TOTAL:75 PERIODS


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CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MOHAMED ASIL J** student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **18.08.2022** to **31.08.2022**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

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

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC

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UNIT III COMPUTER FUNDAMENTALS

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

UNIT IV PROCESSOR

Instruction Execution – Building a Data Path – Designing a Control Unit – Hardwired Control, Microprogrammed Control – Pipelining – Data Hazard – Control Hazards.

UNIT V MEMORY AND I/O

Memory Concepts and Hierarchy – Memory Management – Cache Memories: Mapping and Replacement Techniques – Virtual Memory – DMA – I/O – Accessing I/O: Parallel and Serial Interface – Interrupt I/O – Interconnection Standards: USB, SATA.

COURSE OUTCOMES:

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

CO1 : Design various combinational digital circuits using logic gates

CO2 : Design sequential circuits and analyze the design procedures

CO3 : State the fundamentals of computer systems and analyze the execution of an instruction

CO4 : Analyze different types of control design and identify hazards

CO5 : Identify the characteristics of various memory systems and I/O communication

TOTAL:75 PERIODS


PRINCIPAL
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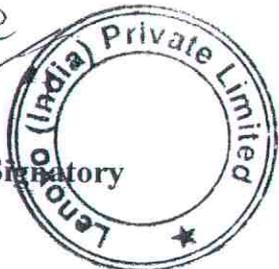
CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. MOHAMED YASIR M** student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **18.08.2022** to **31.08.2022**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

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

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC

Introduction to Sequential Circuits – Flip-Flops – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design – Moore/Mealy models, state minimization, state assignment, circuit implementation - Registers – Counters.

UNIT III COMPUTER FUNDAMENTALS

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

UNIT IV PROCESSOR

Instruction Execution – Building a Data Path – Designing a Control Unit – Hardwired Control, Microprogrammed Control – Pipelining – Data Hazard – Control Hazards.

UNIT V MEMORY AND I/O

Memory Concepts and Hierarchy – Memory Management – Cache Memories: Mapping and Replacement Techniques – Virtual Memory – DMA – I/O – Accessing I/O: Parallel and Serial Interface – Interrupt I/O – Interconnection Standards: USB, SATA.

COURSE OUTCOMES:

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CO3 : State the fundamentals of computer systems and analyze the execution of an instruction

CO4 : Analyze different types of control design and identify hazards

CO5 : Identify the characteristics of various memory systems and I/O communication

PRINCIPAL
 Mohamed Sabar A. J. College of Engineering
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 Chennai - 600 083

TOTAL:75 PERIODS

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He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

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No.34, Rajiv Gandhi Salai (OMR)
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Chennai - 603103.

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC

Introduction to Sequential Circuits – Flip-Flops – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design – Moore/Mealy models, state minimization, state assignment, circuit implementation - Registers – Counters.

UNIT III COMPUTER FUNDAMENTALS

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

UNIT IV PROCESSOR

Instruction Execution – Building a Data Path – Designing a Control Unit – Hardwired Control, Microprogrammed Control – Pipelining – Data Hazard – Control Hazards.

UNIT V MEMORY AND I/O

Memory Concepts and Hierarchy – Memory Management – Cache Memories: Mapping and Replacement Techniques – Virtual Memory – DMA – I/O – Accessing I/O: Parallel and Serial Interface – Interrupt I/O – Interconnection Standards: USB, SATA.

COURSE OUTCOMES:

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

CO1 : Design various combinational digital circuits using logic gates

CO2 : Design sequential circuits and analyze the design procedures

CO3 : State the fundamentals of computer systems and analyze the execution of an instruction

CO4 : Analyze different types of control design and identify hazards

CO5 : Identify the characteristics of various memory systems and I/O communication

TOTAL:75 PERIODS

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

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
- To understand the basic structure and operation of a digital computer.
- To study the design of data path unit, control unit for processor and to familiarize with the hazards.
- To understand the concept of various memories and I/O interfacing.

UNIT I COMBINATIONAL LOGIC

Combinational Circuits – Karnaugh Map - Analysis and Design Procedures – Binary Adder – Subtractor – Decimal Adder - Magnitude Comparator – Decoder – Encoder – Multiplexers - Demultiplexers

UNIT II SYNCHRONOUS SEQUENTIAL LOGIC

Introduction to Sequential Circuits – Flip-Flops – operation and excitation tables, Triggering of FF, Analysis and design of clocked sequential circuits – Design – Moore/Mealy models, state minimization, state assignment, circuit implementation - Registers – Counters.

UNIT III COMPUTER FUNDAMENTALS

Functional Units of a Digital Computer: Von Neumann Architecture – Operation and Operands of Computer Hardware Instruction – Instruction Set Architecture (ISA): Memory Location, Address and Operation – Instruction and Instruction Sequencing – Addressing Modes, Encoding of Machine Instruction – Interaction between Assembly and High Level Language.

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

TOTAL:75 PERIODS

Lenovo.com

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Lenovo (India) Private Limited
RBD Icon, Level-2, Dodderakundi Village
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Bangalore - 560 037, Karnataka, India.
Office 91 80 6826 3006
Fax 91 80 6826 3003
CIN No. - U72900KA2005170035783

Regional Office.
Lenovo (India) Private Limited
RS19/1A-2A, Edayarpalayam Village
Cuddalore Main Road, Thavalakuppam
Pondicherry - 605 007
Cell No. 1-8575-8707-2
Office 91 413 2619 400
Fax 91 413 2619 428



07.09.2022

CERTIFICATE OF IN-PLANT TRAINING

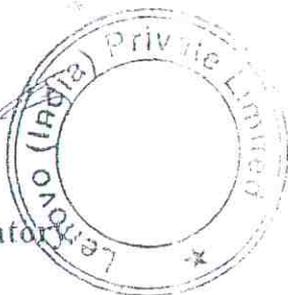
This is to certify that **Mr. AADIL HATHIM** A student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **18.03.2022** to **31.08.2022**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.


Authorized Signatory




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

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
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TOTAL:75 PERIODS


PRINCIPAL
Mohan Babu Pathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
SIPCOT - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
- To analyze and design sequential circuits
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Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

Lenovo.com

Registered Office:
Lenovo (India) Private Limited
RBD Icon, Level-2, Doddenakundi Village
Marathahalli Outer Ring Road
Bangalore - 560 037, Karnataka, India
Office 91 80 6826 3000
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LIN No. 1-8575-8707-2
Office 91 413 2619 400
Fax 91 413 2619 428



07.09.2022

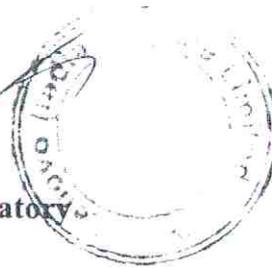
CERTIFICATE OF IN-PLANT TRAINING

This is to certify that **Mr. LOGESH B** student of **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING** has undergone In-Plant Training in Manufacturing Operations for the period from **18.08.2022** to **31.08.2022**.

He has displayed professional acumen during the period of In-plant Training and we appreciate his interest in learning.

We wish him all success in his future endeavours.

For Lenovo (India) Pvt. Ltd.


Authorized Signatory



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

COURSE OBJECTIVES:

- To analyze and design combinational circuits.
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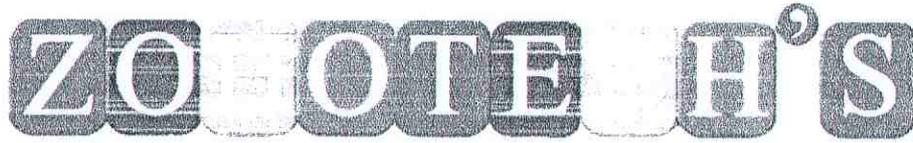
CO3 : State the fundamentals of computer systems and analyze the execution of an instruction

CO4 : Analyze different types of control design and identify hazards

CO5 : Identify the characteristics of various memory systems and I/O communication

TOTAL:75 PERIODS

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



Training & Placement Services

Certificate of Completion

We hereby certify that **Aadil Hathim . A (Reg.No 311821205001)** pursuing his/her **BE-IT** 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
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (GMR)
Highway Egattur,
Chennai - 600033

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpeta 603101.

Email: info@zohotech.com Phone: +91 85085 85683

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

Understanding the Basic Web Development Framework - User - Browser - Webserver - Backend Services - MVC Architecture - Understanding the different stacks - The role of Express - Angular - Node - Mongo DB - React

UNIT II NODE JS

9

Basics of Node JS - Installation - Working with Node packages - Using Node package manager - Creating a simple Node.js application - Using Events - Listeners - Timers - Callbacks - Handling Data I/O - Implementing HTTP services in Node.js

UNIT III MONGO DB

9

Understanding NoSQL and MongoDB - Building MongoDB Environment - User accounts
Access control - Administering databases - Managing collections - Connecting to MongoDB from Node.js - simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK - Basic React applications - React Components - React State - Express REST APIs - Modularization and Webpack - Routing with React Router - Server-side rendering

COURSE OUTCOMES:

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

- CO1:** Understand the various stacks available for web application development
- CO2:** Use Node.js for application development
- CO3:** Develop applications with MongoDB
- CO4:** Use the features of Angular and Express
- CO5:** Develop React applications

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

TOTAL:45 PERIODS



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.J.ABDUL BASITH AHAMED**
Reg.No: 311821205002 pursuing Bachelor of Information Technology in
Mohamed Sathak AJ College of Engineering, Chennai has successfully completed
an Internship from 05/07/2023 TO 29/07/2023. During this period his character
and conduct was good.



For THERMODYN EDUTECH

Director

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No. 84, Rajiv Gandhi Road, Sipcot,
Sipcot - 603103, Chennai - 603103.

Regd. Office: No.83/35, LDG-Road, Little Mount, Chennai-600015. Website: www.thermodynedutech.com/
Ph. no: +91 7402378808

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL – Domain Name- Web Browsers and Web Servers- Working principle of a Website – Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML – Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction – Variables and Data Types-Statements – Operators - Literals- Functions Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING – PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading – Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture – Servlet Life cycle- Form GET and POST actions - Sessions – Cookies – Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

Mohamed Ali College of Engineering
Rajiv Gandhi Salil (SIT)
Sipcot - IT Highway Egattur,
Chennai - 603103.

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

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UNIT V REACT

9

MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

COURSE OUTCOMES:

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- CO1:** Understand the various stacks available for web application development
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TOTAL:45 PERIODS**PRINCIPAL**

Mohamed Sathak A.J. College of Engineering
Rajiv Gandhi Salai (OMR)
IT Highway Egattur,
Chennai - 600 095



Training & Placement Services

Certificate of Completion

We hereby certify that **A.Akshaya (Reg.No 311821205007)** pursuing his/her **BE-IT** 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.

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

Zohotech's Placement Services

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email: info@zohotech.com Phone: 91 85085 85683

COURSE OBJECTIVES:

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

TOTAL:45 PERIODS



Training & Placement Services

Certificate of Completion

We hereby certify that **M. Dhanusiya (Reg.No 311821205011)** pursuing his/her **BE-IT** 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.

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Nandhinee S

Nandhinee S

Director of Training.

Zohotech's Services.

PRINCIPAL

Mohamed Sathak A.J. College of Engineering
V24, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

Zohotech's Placement Services

No.44 1st Floor Mahalakshmi Nagar, Kanchipuram High Road, Chengalpeta 603101.

Email: info@zohotech.com Phone: +91 85085 85683

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

TOTAL:45 PERIODS

ZOHOTECH'S

Training & Placement Services

Certificate of Completion

We hereby certify that **Durga devi.K (Reg.No 311821205012)** pursuing his/her **BE-IT** 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.



PRINCIPAL

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Zohotech's Placement Services

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email: info@zohotechservices.com Phone: +91 85085 85683

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Sipcot - IT Highway Egattur,
Chennai - 603103.

TOTAL:45 PERIODS



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.J.S.DWARAKA Reg.No: 311821205013**, pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

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

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL – Domain Name- Web Browsers and Web Servers- Working principle of a Website – Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML – Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction – Variables and Data Types-Statements – Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING – PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading – Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture – Servlet Life cycle- Form GET and POST actions Sessions – Cookies – Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

Mohamed Sathak A. S.
 PRINCIPAL
 No.34, Rajiv Gandhi Salai (IT Park)
 Sipcot - IT Highway Egattur,
 Chennai - 603103.



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.M.GANAPATHI Reg.No: 311821205015**, pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

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

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
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UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

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JavaScript Introduction - Variables and Data Types-Statements - Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING - PHP

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PHP - Working principle of PHP - PHP Variables - Constants - Operators - Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading - Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture - Servlet Life cycle- Form GET and POST actions - Sessions - Cookies - Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

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



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.R.HARISH Reg.No: 311821205016**, pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

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

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

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Internet Overview - Fundamental computer network concepts - Web Protocols - URL - Domain Name- Web Browsers and Web Servers- Working principle of a Website - Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

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HTML - Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

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JavaScript Introduction - Variables and Data Types-Statements - Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING - PHP

9

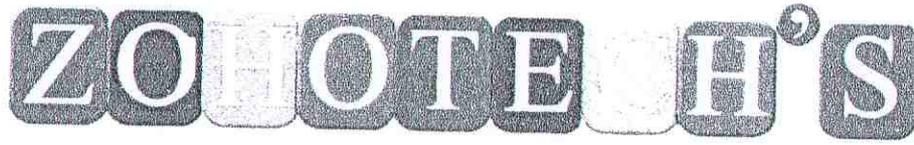
PHP - Working principle of PHP - PHP Variables - Constants - Operators - Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading - Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture - Servlet Life cycle- Form GET and POST actions - Sessions - Cookies - Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

PRINCIPAL
 Mohamed Sathak A.J. College of Engineering
 No. 24, Rajiv Gandhi Salai (OMR)
 Sipcot - IT Highway Egattur,
 Chennai - 603103.



Training & Placement Services

Certificate of Completion

We hereby certify that **A.Junaith Akther (Reg.No 311821205019)** pursuing his/her **BE-IT** 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

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpattu, Chennai - 603101.

Email info@zohotech.com Phone: +91 85085 85683

PRINCIPAL

Mohamed Sathak A.J. College of Engineering
No.44 Chilly Gandhi Salai (OMR)
Sipcot - Kanchipuram Highway Egattur,
Chennai - 603101

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

Understanding the Basic Web Development Framework - User - Browser – Webserver - Backend Services – MVC Architecture - Understanding the different stacks –The role of Express – Angular – Node – Mongo DB – React

UNIT II NODE JS

9

Basics of Node JS – Installation – Working with Node packages – Using Node package manager – Creating a simple Node.js application – Using Events – Listeners –Timers - Callbacks – Handling Data I/O – Implementing HTTP services in Node.js

UNIT III MONGO DB

9

Understanding NoSQL and MongoDB – Building MongoDB Environment – User accounts
Access control – Administering databases – Managing collections – Connecting to MongoDB from Node.js – simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

COURSE OUTCOMES:

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

CO1: Understand the various stacks available for web application development **CO2:** Use Node.js for application development

CO3: Develop applications with MongoDB

CO4: Use the features of Angular and Express

CO5: Develop React applications


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

TOTAL:45 PERIODS



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.R.KALAISELVAN, Reg.No: 311821205020**, pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

PRINCIPAL

Mohamed Sathak A.J. College of Engineering
SIPCOT - IT Park, Chennai - 603103

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL - Domain Name- Web Browsers and Web Servers- Working principle of a Website - Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

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HTML - Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction - Variables and Data Types-Statements - Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING - PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators - Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading - Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture - Servlet Life cycle- Form GET and POST actions - Sessions - Cookies - Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

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



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.P.MANIKANADAN Reg.No: 311821205023** pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

PRINCIPAL

Mohamed Sathak Salai (OMR)
SIPCOT
Chennai - 603103

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL - Domain Name- Web Browsers and Web Servers- Working principle of a Website - Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML - Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction - Variables and Data Types-Statements - Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING - PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators - Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading - Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture - Servlet Life cycle- Form GET and POST actions - Sessions - Cookies - Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

[Handwritten signature]
 PRINCIPAL
 Government Sathak A.J. College of Engineering
 No.34, Rajiv Gandhi Salai (GMR)
 SIPCOT - IT Highway Egattur,
 Chennai - 603103.

ZOHOTECH'S

Training & Placement Services

Certificate of Completion

We hereby certify that **H.Mohamed harshath (Reg.No 311821205027)** pursuing his/her **BE-IT** 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

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email info@zohotech.com Phone: +91 85085 85683

Principal
Mohamed Sathak A.J. College of Engineering
No. 44, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet
Sipcot - IT Park, Chengalpet
Chennai - 603103.

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

Understanding the Basic Web Development Framework - User - Browser – Webserver - Backend Services – MVC Architecture - Understanding the different stacks –The role of Express – Angular – Node – Mongo DB – React

UNIT II NODE JS

9

Basics of Node JS – Installation – Working with Node packages – Using Node package manager – Creating a simple Node.js application – Using Events – Listeners –Timers - Callbacks – Handling Data I/O – Implementing HTTP services in Node.js

UNIT III MONGO DB

9

Understanding NoSQL and MongoDB – Building MongoDB Environment – User accounts
Access control – Administering databases – Managing collections – Connecting to MongoDB from Node.js – simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

COURSE OUTCOMES:

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

CO1: Understand the various stacks available for web application development **CO2:** Use Node.js for application development

CO3: Develop applications with MongoDB

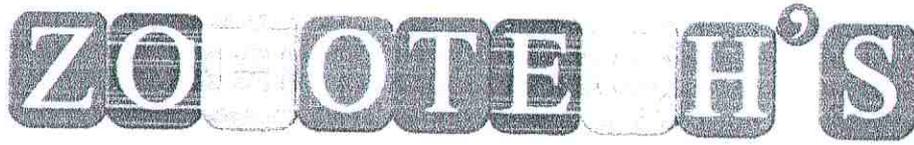
CO4: Use the features of Angular and Express

CO5: Develop React applications



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

TOTAL:45 PERIODS



Training & Placement Services

Certificate of Completion

We hereby certify that **MOHAMED MUJAMMIL.M** (Reg.No **311821205028**) pursuing his/her **BE-IT** 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

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpattu-603101.

Email: info@zohotech.com Phone: +91 97895 85589 (OMR)

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
Rajiv Gandhi
Highway Egattur,
603103.

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

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Understanding the Basic Web Development Framework - User - Browser – Webserver - Backend Services – MVC Architecture - Understanding the different stacks –The role of Express – Angular – Node – Mongo DB – React

UNIT II NODE JS

9

Basics of Node JS – Installation – Working with Node packages – Using Node package manager – Creating a simple Node.js application – Using Events – Listeners –Timers - Callbacks – Handling Data I/O – Implementing HTTP services in Node.js

UNIT III MONGO DB

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UNIT IV EXPRESS AND ANGULAR

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Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

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MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

COURSE OUTCOMES:

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

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CO3: Develop applications with MongoDB

CO4: Use the features of Angular and Express

CO5: Develop React applications

Wsh

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

TOTAL:45 PERIODS



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.M.MOHAMED FARHAAN**
Reg.No: 311821205034 pursuing Bachelor of Information Technology in
Mohamed Sathak AJ College of Engineering, Chennai has successfully completed
an Internship from 05/07/2023 TO 29/07/2023. During this period his character
and conduct was good.



For THERMODYN EDUTECH

Director

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
Railway Gandhi Salai (OMR)
Chennai - 603103

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
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UNIT I WEBSITE BASICS

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UNIT II WEB DESIGNING

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HTML – Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

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JavaScript Introduction – Variables and Data Types-Statements – Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING – PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading – Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture – Servlet Life cycle- Form GET and POST actions - Sessions – Cookies – Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

PRINCIPAL
M. Sathak A.J. College of Engineering
No. 24 Rajiv Gandhi Salai (OMR)
Sect - IT Highway Egattur,
Chennai - 603103.



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.M.MUGILAN, Reg.No: 311821205037**, pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

Mohamed Sathak AJ College of Engineering
Principal
34, Rajiv Gandhi Salai (Old MT Road), Chennai - 600015

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
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UNIT I WEBSITE BASICS

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UNIT IV SERVER SIDE PROCESSING AND SCRIPTING - PHP

9

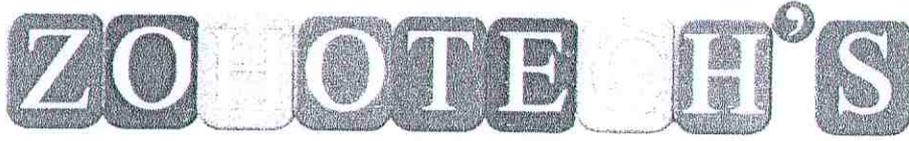
PHP - Working principle of PHP - PHP Variables - Constants - Operators - Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading - Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

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Servlets: Java Servlet Architecture - Servlet Life cycle- Form GET and POST actions - Sessions - Cookies - Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

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



Training & Placement Services

Certificate of Completion

We hereby certify that **Muhammad hafiz S.H (Reg.No 311821205038)** pursuing his/her **BE-IT** 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
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OVR)
Dept - IT Highway, Chennai - 603103.

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email: info@zohotechs.com Phone: +91 85085 85683

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

Understanding the Basic Web Development Framework - User - Browser - Webserver - Backend Services - MVC Architecture - Understanding the different stacks - The role of Express - Angular - Node - Mongo DB - React

UNIT II NODE JS

9

Basics of Node JS - Installation - Working with Node packages - Using Node package manager - Creating a simple Node.js application - Using Events - Listeners - Timers - Callbacks - Handling Data I/O - Implementing HTTP services in Node.js

UNIT III MONGO DB

9

Understanding NoSQL and MongoDB - Building MongoDB Environment - User accounts
Access control - Administering databases - Managing collections - Connecting to MongoDB from Node.js - simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK - Basic React applications - React Components - React State - Express REST APIs - Modularization and Webpack - Routing with React Router - Server-side rendering

COURSE OUTCOMES:

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

- CO1:** Understand the various stacks available for web application development
- CO2:** Use Node.js for application development
- CO3:** Develop applications with MongoDB
- CO4:** Use the features of Angular and Express
- CO5:** Develop React applications

PRINCIPAL

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

TOTAL:45 PERIODS

ZOHOTECH'S

Training & Placement Services

Certificate of Completion

We hereby certify that **N.Nishad Nazeer (Reg.No 311821205040)** pursuing his/her **BE-IT** 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
Mohamed Sathak A.J. College of Engineering
No.44, Rajiv Gandhi Salai (OMR)
Sp. - IT Highway Egattur,
Chennai - 603103.

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email: info@zohotechs.com Phone: +91 85085 85683

COURSE OBJECTIVES:

- To understand the various components of full stack development
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- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

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Understanding the Basic Web Development Framework - User - Browser – Webserver - Backend Services – MVC Architecture - Understanding the different stacks –The role of Express – Angular – Node – Mongo DB – React

UNIT II NODE JS

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UNIT III MONGO DB

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Understanding NoSQL and MongoDB – Building MongoDB Environment – User accounts
Access control – Administering databases – Managing collections – Connecting to MongoDB from Node.js – simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

COURSE OUTCOMES:

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

- CO1:** Understand the various stacks available for web application development
- CO2:** Use Node.js for application development
- CO3:** Develop applications with MongoDB
- CO4:** Use the features of Angular and Express
- CO5:** Develop React applications



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

TOTAL:45 PERIODS



Training & Placement Services

Certificate of Completion

We hereby certify that **G.Nithya sree (Reg.No 311821205041)** pursuing his/her **BE-IT** 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

PRINCIPAL

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

Zohotech's Placement Services

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email: info@zohotech.com Phone: +91 85085 85683

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

Understanding the Basic Web Development Framework - User - Browser - Webserver - Backend Services - MVC Architecture - Understanding the different stacks - The role of Express - Angular - Node - Mongo DB - React

UNIT II NODE JS

9

Basics of Node JS - Installation - Working with Node packages - Using Node package manager - Creating a simple Node.js application - Using Events - Listeners - Timers - Callbacks - Handling Data I/O - Implementing HTTP services in Node.js

UNIT III MONGO DB

9

Understanding NoSQL and MongoDB - Building MongoDB Environment - User accounts
Access control - Administering databases - Managing collections - Connecting to MongoDB from Node.js - simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK - Basic React applications - React Components - React State - Express REST APIs - Modularization and Webpack - Routing with React Router - Server-side rendering

COURSE OUTCOMES:

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

CO1: Understand the various stacks available for web application development **CO2:** Use Node.js for application development

CO3: Develop applications with MongoDB

CO4: Use the features of Angular and Express

CO5: Develop React applications

Handwritten signature

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

TOTAL:45 PERIODS



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.V.PRAJESH RAM Reg.No: 311821205043** pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



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

For THERMODYN EDUTECH

Director

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL - Domain Name- Web Browsers and Web Servers- Working principle of a Website - Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML - Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction - Variables and Data Types-Statements - Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING - PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators - Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading - Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture - Servlet Life cycle- Form GET and POST actions - Sessions - Cookies - Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

PRINCIPAL

Mohamed S. J. College of Engineering
34, Rajiv Gandhi Road (Old),
Sipcot - 11, Disney Road,
Chennai - 603105.



Training & Placement Services

Certificate of Completion

We hereby certify that Prarthana.B (Reg.No 311821205044) pursuing his/her BE-IT 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.

PRINCIPAL

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

Zohotech's Placement Services

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email: info@zohotech.com Phone: +91 85085 85683

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

Understanding the Basic Web Development Framework - User - Browser – Webserver - Backend Services – MVC Architecture - Understanding the different stacks –The role of Express – Angular – Node – Mongo DB – React

UNIT II NODE JS

9

Basics of Node JS – Installation – Working with Node packages – Using Node package manager – Creating a simple Node.js application – Using Events – Listeners –Timers - Callbacks – Handling Data I/O – Implementing HTTP services in Node.js

UNIT III MONGO DB

9

Understanding NoSQL and MongoDB – Building MongoDB Environment – User accounts
Access control – Administering databases – Managing collections – Connecting to MongoDB from Node.js – simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

COURSE OUTCOMES:

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

- CO1: Understand the various stacks available for web application development
- CO2: Use Node.js for application development
- CO3: Develop applications with MongoDB
- CO4: Use the features of Angular and Express
- CO5: Develop React applications



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

TOTAL:45 PERIODS



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Ms.A.REHANA KHANM Reg.No: 311821205047** pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.

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



For THERMODYN EDUTECH

Director

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL – Domain Name- Web Browsers and Web Servers- Working principle of a Website – Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML – Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction – Variables and Data Types-Statements – Operators - Literals-FunctionsObjects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING – PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading – Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture, Servlet Life cycle, Form GET and POST actions - Sessions – Cookies – Database connectivity, JDBC Creation of simple interactive applications - Simple database applications

PRINCIPAL

No.34, Rajiv Gandhi Salai (O.M.R.)
SIPCOT - IT Highway Egattur,
Chennai - 603103.

ZOHOTECH'S

Training & Placement Services

Certificate of Completion

We hereby certify that **SEYED AHAMED IFTHIKAR . MJ** (Reg.No **311821205055**) pursuing his/her **BE-IT** 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.



PRINCIPAL

Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
IT Highway Egattur,
Chennai - 600119

Zohotech's Placement Services

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email: info@zohotechs.com Phone: +91 85085 85683

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

Understanding the Basic Web Development Framework - User - Browser – Webservice - Backend Services – MVC Architecture - Understanding the different stacks –The role of Express – Angular – Node – Mongo DB – React

UNIT II NODE JS

9

Basics of Node JS – Installation – Working with Node packages – Using Node package manager – Creating a simple Node.js application – Using Events – Listeners –Timers - Callbacks – Handling Data I/O – Implementing HTTP services in Node.js

UNIT III MONGO DB

9

Understanding NoSQL and MongoDB – Building MongoDB Environment – User accounts
Access control – Administering databases – Managing collections – Connecting to MongoDB from Node.js – simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

COURSE OUTCOMES:

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

- CO1:** Understand the various stacks available for web application development
- CO2:** Use Node.js for application development
- CO3:** Develop applications with MongoDB
- CO4:** Use the features of Angular and Express
- CO5:** Develop React applications

TOTAL:45 PERIODS


 PRINCIPAL
 Mohamed Sathak A.J. College of Engineering
 4, Rajiv Gandhi Salai (OMR)
 Sipcot - IT Highway Egattur,
 Chennai - 603103.



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.S.SHAMEEL AHAMED Reg.No: 311821205056** pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

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

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL - Domain Name- Web Browsers and Web Servers- Working principle of a Website - Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML - Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction - Variables and Data Types-Statements - Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING - PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators - Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading - Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture - Servlet Life cycle - Form GET and POST actions - Sessions - Cookies - Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

[Handwritten Signature]

PRINCIPAL
 Mohan A. J. Chellappa
 No.34, Rajiv Gandhi Salai (CIT),
 Sipcot - IT Highway, Egmore
 Chennai - 603103.



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.S.SRI BALAJI Reg.No: 311821205057** pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



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

For THERMODYN EDUTECH

Director

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL - Domain Name- Web Browsers and Web Servers- Working principle of a Website - Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML - Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction - Variables and Data Types-Statements - Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING - PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators - Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading - Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture - Servlet Life cycle- Form GET and POST actions - Sessions - Cookies - Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

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PRINCIPAL
 Monamee College of Engineering
 Thiruvallur - 603103
 Rajiv Gandhi Education
 Society
 Chennai - 603103



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.S.SRITHAR Reg.No: 311821205058** pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

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

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL - Domain Name- Web Browsers and Web Servers- Working principle of a Website - Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML – Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction – Variables and Data Types-Statements – Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING – PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading – Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture – Servlet Life cycle- Form GET and POST actions - Sessions – Cookies – Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

[Handwritten Signature]
PRINCIPAL
 Mohan Sathak A.J. College of Engineering
 No.34, Rajmundry Bypass
 IT Highway, P.V. Vengal Rao Nagar,
 Chennai - 600 093



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.M.SUMESH Reg.No: 311821205059** pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

PRINCIPAL

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

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL – Domain Name- Web Browsers and Web Servers- Working principle of a Website – Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML – Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction – Variables and Data Types-Statements – Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING – PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading – Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture – Servlet Life cycle- Form GET and POST actions - Sessions – Cookies – Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

PRINCIPAL
 Mohan A. J. College of Engineering
 24, Rajiv Gandhi Salai (Old)
 Sittur Highway
 Chennai - 603103.



THERMODYN EDUTECH

Date: 29.07.2023

TO WHOM EVER IT MAY CONCERN

This is to certify that **Mr.G.VENGADESAN Reg.No: 311821205060** pursuing Bachelor of Information Technology in Mohamed Sathak AJ College of Engineering, Chennai has successfully completed an Internship from 05/07/2023 TO 29/07/2023. During this period his character and conduct was good.



For THERMODYN EDUTECH

Director

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

COURSE OBJECTIVES:

- To comprehend and analyze the basic concepts of web programming and internet protocols.
- To describe how the client-server model of Internet programming works.
- To demonstrate the uses of scripting languages
- To write simple scripts for the creation of web sites
- To create database applications

UNIT I WEBSITE BASICS

9

Internet Overview - Fundamental computer network concepts - Web Protocols - URL – Domain Name- Web Browsers and Web Servers- Working principle of a Website – Creating a Website - Client-side and server-side scripting

UNIT II WEB DESIGNING

9

HTML – Form Elements - Input types and Media elements - CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface.

UNIT III CLIENT-SIDE PROCESSING AND SCRIPTING

9

JavaScript Introduction – Variables and Data Types-Statements – Operators - Literals- Functions-Objects-Arrays-Built-in Objects- Regular Expression, Exceptions, Event handling, Validation - JavaScript Debuggers.

UNIT IV SERVER SIDE PROCESSING AND SCRIPTING – PHP

9

PHP - Working principle of PHP - PHP Variables - Constants - Operators – Flow Control and Looping - Arrays - Strings - Functions - File Handling - File Uploading – Email Basics - Email with attachments - PHP and HTML - Simple PHP scripts - Databases with PHP

UNIT V SERVLETS AND DATABASE CONNECTIVITY

9

Servlets: Java Servlet Architecture – Servlet Life cycle- Form GET and POST actions - Sessions – Cookies – Database connectivity - JDBC Creation of simple interactive applications - Simple database applications

ZONOTECH'S

Training & Placement Services

Certificate of Completion

We hereby certify that **A.MOHAMED KALITH** (Reg.No **311821205302**) pursuing his/her **BE-IT** 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.
Zonotech's Services.



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

Zohotech's Placement Services

No.44 1st Floor, Mahalakshmi Nagar, Kanchipuram High Road, Chengalpet 603101.

Email: info@zonotechs.com Phone: +91 85085 85683

COURSE OBJECTIVES:

- To understand the various components of full stack development
- To learn Node.js features and applications
- To develop applications with MongoDB
- To understand the role of Angular and Express in web applications
- To develop simple web applications with React

UNIT I BASICS OF FULL STACK

9

Understanding the Basic Web Development Framework - User - Browser – Webserver - Backend Services – MVC Architecture - Understanding the different stacks –The role of Express – Angular – Node – Mongo DB – React

UNIT II NODE JS

9

Basics of Node JS – Installation – Working with Node packages – Using Node package manager – Creating a simple Node.js application – Using Events – Listeners –Timers - Callbacks – Handling Data I/O – Implementing HTTP services in Node.js

UNIT III MONGO DB

9

Understanding NoSQL and MongoDB – Building MongoDB Environment – User accounts
Access control – Administering databases – Managing collections – Connecting to MongoDB from Node.js – simple applications

UNIT IV EXPRESS AND ANGULAR

9

Implementing Express in Node.js - Configuring routes - Using Request and Response objects - Angular - Typescript - Angular Components - Expressions - Data binding - Built-in directives

UNIT V REACT

9

MERN STACK – Basic React applications – React Components – React State – Express REST APIs - Modularization and Webpack - Routing with React Router – Server-side rendering

COURSE OUTCOMES:

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

- CO1:** Understand the various stacks available for web application development
- CO2:** Use Node.js for application development
- CO3:** Develop applications with MongoDB
- CO4:** Use the features of Angular and Express
- CO5:** Develop React applications

Handwritten signature
PRINCIPAL
 Mohanlal Pathak A.J. College of Engineering
 No.34, Rajagopal Salai (Old)
 Sipcot - IT Highway, Egattur,
 Chennai - 603103.

TOTAL:45 PERIODS