



"Towards Ubiquitous Computing Technology"
DEPARTMENT OF COMPUTER ENGINEERING
A.Y. 2024-25 (SEM-II)



Welcome and best wishes to all the friends of the Department who receive this Newsletter.

It has been a productive and engaging semester for the Department. It gives great pleasure to present the latest issue of "MANIFESTATION".

MESSAGE FROM HEAD OF THE DEPARTMENT

This internal newsletter serves as a medium to share the activities and progress of the Department. The past semester witnessed active participation of students and faculty in academic, co-curricular, extra-curricular, and research activities. The Department had a successful semester, and I sincerely thank all my colleagues for their dedicated efforts towards its steady growth.

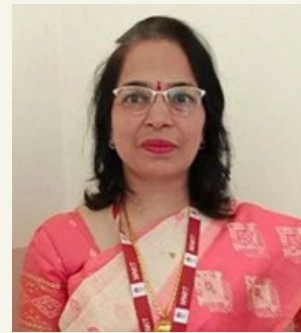
-Dr. Subhash Rathod



THE EDITORIAL BOARD



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MANIFESTATION

NEWSLETTER

Vision:

- To achieve techno-social excellence by fostering innovative, sustainable and ubiquitous computing solutions for societal needs.

Mission :

- Providing quality education in computing through innovative pedagogy and research.
- Promoting innovation and creative thinking in technology-driven studies.
- Encouraging real-world application of evolving technological trends.
- Developing industry-ready competencies among graduates.



Program Specific Outcomes (PSO)

PSO1:

- Apply analytical and programming skills using open-ended environments to design, implement, test, and deliver solutions

PSO2:

- Develop effective solutions using standard software engineering principles and life-cycle practices aligned with industry standards

Class Toppers

A.Y. 2024-25

S.E.(SEM-II)



**PENNA VENKATA
YAMINI (10)**



**NIKAM SHREYA
(9.68)**



**WAPHARE
VAISHANVI(9.59)**

T.E.(SEM-II)



**ANJALI DHUMAL
(9.93)**



**SAMRUDDHI BORE
(9.93)**



**SANKALP INDISH
(9.93)**

B.E.(SEM-II)



**DHAMDHERE
ANUSHKA (9.33)**



**ASHTEKAR SHRUTI
(9.05)**



**VIKHE VAISHNAVI
PRAKASHRAO(8.99)**

FACULTY ACHIEVEMENTS

Jury Member – IEEE Pune Section Awards 2025



Dr. Monika Dangore was invited to serve as an **Honorary Jury Member** for the **IEEE Pune Section Awards 2025**. This recognition reflects her expertise, professional standing, and valuable contribution to evaluating excellence in technical and professional achievements under the **IEEE Pune Section**.

NPTEL Top Performing Mentor Recognition



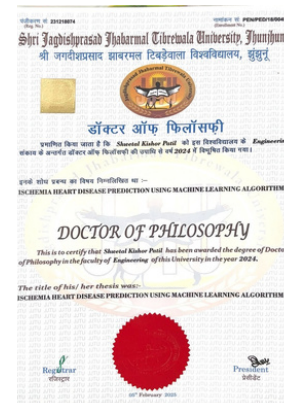
Faculty members **Dr. Jayashri Prashant Shinde** and **Mr. Yogesh Bhagwat Dongare** from the Department of Computer Engineering were awarded the NPTEL Mentor Certificate for their effective mentorship in NPTEL online certification courses.

Session Chair – International Conference ICRAES-2K25



Dr. Mangesh D. Salunke, faculty member from MMIT Pune, served as a **Session Chair** at the **1st International Conference on Recent Advances in Engineering and Sciences (ICRAES-2K25)**, held on **22nd–23rd April 2025** in online mode. His expertise and effective session management contributed significantly to the smooth conduct and overall success of the conference.

Faculty Doctoral Accomplishments



The institute proudly acknowledges the successful completion of the **Doctor of Philosophy (Ph.D.)** by **Mrs. Shwetal Patil** and **Mr. Swapnil Santosh Chaudhari**. This achievement reflects their dedication to academic excellence, research, and continuous professional development, and significantly contributes to strengthening the institute's research culture.

Faculty Achievements

Dr.Megha Kadam As Reviewer



MEGHA V KADAM for serving as a reviewer for Transactions on Emerging Telecommunications Technologies

Letter of Appreciation As Reviewer



22nd IEEE International Conference on Artificial Intelligence and Quantum Computation-Based Sensor Applications

Letter of Appreciation As Reviewer



22nd IEEE International Conference on Artificial Intelligence and Quantum Computation-Based Sensor Applications

Students Achievements

Vaishanvi Vikhe – Athletics Champion



Vaishanvi Vikhe (BE Computer) won the Heptathlon event at *inter-collegiate athletics*, was Runner-up in *Hurdles*, and Runner-up in *Discus Throw*. She also secured the Heptathlon title at *Zonal SPPU level* demonstrating excellence in sports.

National-Level Paper Presentation at IEI Pune



Tripura Satish Patange presented a research paper titled “Advanced Yield Prediction Models for Precision Farming Using Machine Learning” at the All India Seminar on Emerging Trends in Engineering and Technology: Shaping the Future of Innovation, organized by The Institution of Engineers (India), Pune Local Centre, held on 19th–20th March 2025.

MMIT Students Shine at IEEE Smart Village IdeaRun



Students of MMIT Pune achieved notable recognition at the **IEEE Smart Village – IdeaRun 2024**, with multiple teams securing **Top 50 positions at the South Asia level**, showcasing strong innovation and technical excellence. Their performance highlights creativity in addressing real-world challenges aligned with sustainable development and smart village initiatives.

Paper Presentation at International Conference ICNGAI-2025



Siddhesh Shelke, student of MMIT Pune, presented his research paper titled “Smart Traffic System for Emergency Vehicles” at the 1st International Conference on Next-Gen AI & ML (ICNGAI-2025). The conference was organized by the Department of Computer Engineering and Artificial Intelligence at MMIT in association with SERB, India. His presentation highlighted innovative application of AI and machine learning to improve emergency response systems and smart traffic management.

Students Research Publication

1. "Retina Analysis App" — Prof. Yogendra Patil, Manasi Konde, Pallavi Jadhav, Ashwini Bhadane & Vaishnavi Gade, International Journal for Research in Science, Engineering & Technology (IJRSET), 2025

RESEARCH PUBLICATION Knowledge | Innovation | Impact

International Journal for Research in Science Engineering & Technology (IJRSET)
ISSN 2394-739X | Vol. 12, Issue 5 | May 2025
<https://www.doi.org/10.5281/zenodo.15608054>

RETINA ANALYSIS APP

Prof. Yogendra Patil¹, Manasi Konde², Pallavi Jadhav³, Ashwini Bhadane⁴, Vaishnavi Gade⁵

¹ Associate Professor, Department of Computer Engineering, MMIT, Pune, Maharashtra, India
^{2,3,4,5} U.G. Student, Department of Computer Engineering, MMIT, Pune, Maharashtra, India

ABSTRACT

The Retina Image Analysis Android Application is an AI-powered mobile health (mHealth) solution designed to assist users in the early detection of retina-related disorders through deep learning and interactive guidance. Developed using Java/XML for Android and integrated with Firebase Realtime Database and Authentication, the app allows users to upload retina images from their device gallery and complete symptom-based questionnaires. The core diagnostic process utilizes a Convolutional Neural Network (CNN) model deployed via TensorFlow Lite, which classifies retina images into disease categories and generates confidence scores in real-time.

To enhance interpretability and user support, the application includes an NLP-based chatbot assistant that responds to natural language queries, explains disease outcomes, and offers customized recommendations. The system further employs the Google Maps API to identify and display nearby retina specialists and eye hospitals based on the user's location, thus bridging the gap between digital diagnosis and clinical consultation.

This solution demonstrates how mobile AI, when combined with cloud-based data handling, chatbot interaction, and geolocation services, can empower patients with accurate health insights, promote early intervention, and reduce dependency on in-person screenings, especially in remote or underserved regions.

KEYWORDS

Retina Disease Detection, Android Application, Convolutional Neural Network (CNN), TensorFlow Lite, Firebase, Natural Language Processing, AI Chatbot, Google Maps API, Mobile Health (mHealth), Image Classification, Eye Care, Deep Learning, Symptom Analysis, Realtime Database, Medical AI.

OBJECTIVE

To develop an AI-powered mobile application for early detection of retina-related disorders using deep learning, providing real-time diagnosis, expert guidance, and location-based healthcare support.

METHODOLOGY

- Image Processing**
Retina images are processed and analyzed using CNN with TensorFlow Lite.
- NLP Chatbot**
Provides answers to user queries and personalized recommendations.
- Firebase Integration**
Handles user authentication and realtime database storage.
- Geolocation**
Uses Google Maps API to locate nearby specialists and hospitals.

KEY FINDINGS

- Accurate detection of retina-related disorders using CNN.
- Real-time diagnosis and confidence scores.
- Interactive chatbot for user support.
- Location-based access to eye care services.
- Helps in early intervention and better patient outcomes.

"This application bridges the gap between advanced AI technology and accessible eye care, enabling early detection and timely treatment of retina-related diseases."

HEALTH | TECHNOLOGY | BETTER TOMORROW

2. Visualization and Comparative Simulation of Pathfinding, Searching and Sorting Algorithms
Subhash Rathod, Abhinav Mishra, Akshay Patil, Ashutosh Dhanawade & Gaurav Dalvi, Journal of Engineering Education Transformations (JEET), Vol. 38, Issue 2, 2024, pp. 96–105

Volume 38, No. 2, October 2024, ISSN 2349-2473, eISSN 2394-2707.

Visualization and Comparative Simulation of Pathfinding, Searching and Sorting Algorithms

Subhash Rathod¹, Abhinav Mishra¹, Akshay Patil¹, Ashutosh Dhanawade¹, Gaurav Dalvi¹

¹ Assistant Professor, Computer Department, Marathwada Mitra Mandal's Institute of Technology, Maharashtra, India
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Published in: Journal of Engineering Education Transformations (JEET)
Volume 38, Issue 2, 2024, pp. 96-105.
DOI: 10.16920/jeeet/2024/v38i2/24193

Abstract

This study addresses the need for enhanced algorithms learning through the utilization of comparative simulation and visualization. Motivated by the challenge of comprehending complex algorithms, we emphasize the efficacy of visualization tools. Our research explores the real-time rendering of algorithms in a visual format, facilitating a deeper understanding of their underlying mechanisms. In addition, we introduce a novel comparative simulation feature within our Algorithm Visualizer e-learning application, enabling learners to contrast the performance of diverse algorithms, discern their strengths and weaknesses, and evaluate their applicability to different data sets. Specifically, this application accommodates various algorithms, including Dijkstra's algorithm, DFS, BFS, Binary Search, and more. Learners can employ this tool to scrutinize algorithmic differences and efficiency, exemplified through scenarios like comparing Dijkstra's algorithm and A* algorithm for pathfinding on a map. Furthermore, this feature extends to the evaluation of sorting algorithms, such as Quick Sort and Merge Sort, allowing users to visualize their performance on large data sets. In conclusion, the

Algorithm Visualizer e-learning application serves as a valuable resource for learners, enhancing algorithmic comprehension through comparative simulation and visualization techniques.

Keywords

algorithm visualisation; searching; sorting; pathfinding; digital learning; heuristic algorithms; educational technology.

1. Introduction

In the vast landscape of computer science, the study of algorithms is often encapsulated as the "Design and Analysis of Algorithms." Proficiency in computational thinking and programming is a prerequisite for excelling in this field. Nevertheless, the intricate nature of algorithms can pose a formidable challenge, even to seasoned programmers. Conventional pedagogical methods employed to teach algorithms can often be tedious, failing to provide the essential tools required for efficient and effective learning. As such, there exists a conspicuous gap, waiting to be bridged by a visualization-centric approach to algorithm learning.

This study seeks to address this critical void in the realm of algorithm education by venturing into the

3. "Review on Innovations in Early Detection and Preventive Strategies for Cardiovascular Health"
Prof. S. A. Agrawal, Prasad Pund, Aditya Kavitar, Shivdas Mente & Sachin Sonner, Marathwada Mitra Mandal's Institute of Technology (MMIT), Pune, India

Review on Innovations in Early Detection and Preventive Strategies for Cardiovascular Health

¹Prof. S. A. Agrawal, ²Prasad Pund, ³Aditya Kavitar, ⁴Shivdas Mente, ⁵Sachin Sonner

¹ Assistant Professor, Computer Engineering, Marathwada Mitra Mandal's Institute of Technology, Pune, India
^{2,3,4,5} UG Student, Computer Engineering, Marathwada Mitra Mandal's Institute of Technology, Pune, India

Abstract

Cardiovascular diseases (CVDs) remain the leading cause of death globally, responsible for millions of fatalities each year. A key factor contributing to this high mortality rate is the delayed diagnosis of heart conditions, which often occurs only after symptoms have developed. Although existing diagnostic methods are effective, they are typically employed at later stages, limiting opportunities for preventive action. Early detection and prevention are therefore crucial for reducing heart disease risk and improving patient outcomes. This research introduces a novel approach for early heart disease detection and personalized prevention. It utilizes data from diverse sources, including wearable devices, medical records, and patient self-reports, to predict the likelihood of cardiovascular events. By applying machine learning algorithms, the system accurately assesses each individual's risk level and suggests tailored preventive strategies such as dietary adjustments, increased physical activity, and stress management. It also recommends medical interventions when necessary, like prescriptions or further diagnostic testing. Through continuous monitoring and regularly updated recommendations, this approach aims to reduce the incidence of severe cardiovascular events, enhance patient quality of life, and lower overall healthcare costs.

Keywords: Health Informatics, Health Data Analytics, Risk assessment for heart disease, Machine Learning, Telemedicine, Predictive Modelling.

1. INTRODUCTION

Cardiovascular diseases (CVDs) have collectively remained the leading causes of death worldwide and substantially contribute to loss of health and excess health system costs.^{1,2} The Global Burden of Diseases, Injuries, and Risk Factors (GBD) Study has tracked trends in death and disability since 1990 and has provided an updated perspective on the status of cardiovascular health globally, regionally, and nationally [1]. The GBD Study also measures the burden of disease attributable to 88 risk factors for disease. While understanding the underlying physiologic causes of death is important, rigorously evaluating upstream drivers of disease provides additional strategies to guide public policy. These

"actual causes of death"^{3,4} reflect modifiable, non genetic risk factors that cause these diseases. Their role can be estimated by accounting for risk factor prevalence and exposure, strength of relative risk associations with health outcomes, and cause-specific mortality [1]. In 2019, the World Health Organization (WHO) predicted that 17.5 million people would die from cardiovascular diseases (CVDs), thus accounting for 30% of deaths worldwide. CVDs are the leading cause of death globally, as more people die each year from CVD-related diseases than from anything else. Of all CVDs, an estimated 74 million are attributed to coronary heart disease, while 6.7 million are attributed to stroke, hypertension, coronary artery disease, rheumatic heart disease, and heart failure, among others. CVDs affect low- and middle-income nations the most. In fact, it is estimated that by 2030, nearly 23.6 million people will die from CVDs, as it is expected to remain the leading cause of death in the world's poorest countries [2].

CVDs include several types of heart conditions. The most common of them all, coronary heart disease, may cause heart attacks that kill more than 370,000 people each year. Heart failure is another CVD leading to morbidity and mortality and one of the earliest manifestations of CVD. In recent years, the World Heart Federation has defined multiple risk factors affecting the incidence and occurrence of heart failure, such as arterial hypertension, diabetes, smoking, defective heart valves, damaged heart muscles, and obesity. However, identifying those at high risk of CVD at the early stages and providing appropriate treatments can prevent unexpected and premature deaths [2].

Electrocardiograms (ECG) are utilized to diagnose cardiovascular diseases (CVD). However, identifying long-term ECG abnormalities visually is time-consuming and requires considerable effort. With the introduction of machine learning (ML) in the medical field, many researchers and professionals have found that machine learning-based heart disease diagnosis (MLBHDD) systems offer a cost-effective and adaptable solution. As a result, several studies have proposed MLBHDD using various heart disease datasets. For example, Rashid et al. applied different machine learning techniques such as Naive Bayes (NB), Decision Trees (DT)

Events Organized



Educational Visit to HAL Heritage Centre & Aerospace Museum

Students and faculty of **Marathwada Mitra Mandal's Institute of Technology, Lohgaon, Pune** organized an educational visit to the **HAL Heritage Centre & Aerospace Museum**. The visit provided valuable insights into India's aerospace journey, showcasing the evolution of aircraft, helicopters, aero-engines, and defense technologies developed by **Hindustan Aeronautics Limited (HAL)**.

Inauguration Ceremony of MMIT IEEE Student Branch

The **Inauguration Ceremony of the MMIT IEEE Student Branch** was organized with great enthusiasm in the presence of faculty members and students. The event marked the formal establishment of the IEEE Student Branch at MMIT, aiming to promote technical excellence, professional development, and active participation in IEEE-led academic and industry-oriented activities.



One-Day Hands-on Workshop on Big Data Analytics with Hadoop

The **MMIT IEEE Student Branch Technology** organized a one-day hands-on workshop titled "**Big Data Analytics with Hadoop – Bridging the Student to Young Professional Gap**" on 4th April 2025. The workshop was sponsored by IEEE Young Professionals (YP) and IEEE Foundation, in association with IEEE YP Pune Section.

Social Outreach Visit to Sarthak Seva Sangh

Students and faculty of **Marathwada Mitra Mandal's Institute of Technology, Lohgaon, Pune**, visited **Sarthak Seva Sangh** as part of an institutional outreach initiative. The visit provided meaningful insight into social service activities, community welfare programs, and the importance of social responsibility, helping participants develop awareness beyond academics.



SPONSORED PROJECTS

2024 -25

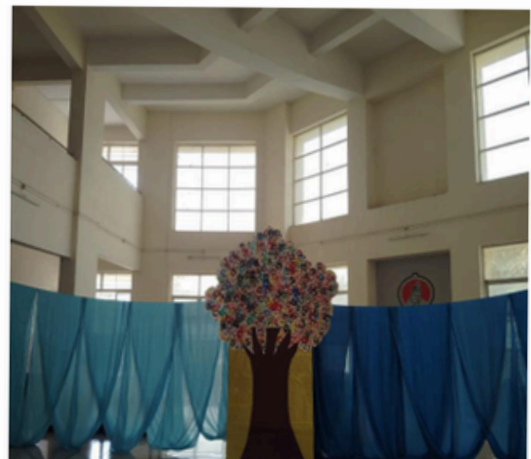
Group Member Name	Guide Name	Project Topic	Sponsored Industry	Link
Vaibhav Bhirud, Ved Dodwadkar, Pradhyuman Patel, Sanket Kokadwar	Dr. S. G. Rathod	Health Vault	Technova Creations	https://drive.google.com/file/d/1jYKq25lIWEJmSXqM8r5qqc_fgR2lTq1R/view?usp=drive_link
Prathamesh Bhandekar, Anushka Dhamdhare, Racheal Pereira, Ritesh Bhokare	Dr. Pramod Dhamdhare	Adaptive conversation Agent for Technical Interview & Real time code Evaluation	Tech Force Services	https://drive.google.com/file/d/1WS2NXs3VffcLc85UGc6uNcwHGJdvWx8J/view?usp=drive_link
Jayesh Bhoge, Vivek Chaudhari, Tahura Sayad, Kaustubh Mahajan	Mr. S. A. Agrawal	Missing Child Identification System	Nexovation Technology	https://drive.google.com/file/d/12MTn-UI1EaflwCNP4RUm3PImBRwC0m2/view?usp=drive_link
Harsh Vivek Behere, Chinmay Panse	Mr. S. S. Chaudhari	“TrueVision – A Multimodel Deep Fake Detector”	IntelliVision Technologies Pvt. Ltd	https://drive.google.com/file/d/1_Ngak_P2CFz0ET3idC Ma9YjH8LbSfUGv/view?usp=drive_link

Group Member Name	Guide Name	Project Topic	Sponsored Industry	Link
Manasi Konde, Pallavi Jadhav, Ashwini Bhadane, Vaishnavi Gade	Dr. Yogendra V. Patil & Mrs. S.A.Kshirsagar	Automated Diabetic ratinopathy sysytem	Yash Hospital	https://drive.google.com/file/d/1pGeKT6_P1kxRRuZCjtIN-n_zqQccs67j/view?usp=drive_link
Sairam Misal, Tushar Karwar, Nikita Wagh, Aishwarya Sawant	Ms. Yamini Warke	Agriculture marketing information system	Globemindes Technology Pvt.Ltd.	https://drive.google.com/file/d/1RUavo0kBXiDXF4ZDp5eG1gELmbFMxcgX/view?usp=drive_link
Siddhi Kollurmath, Isha Hulgeri, Sharvary Gore, Krutika Patil	Mrs. D. J. Bonde	Intelligent Makeup Guide with Facial Analysis and Personalized Recommendations	Piyush IT Services	https://drive.google.com/file/d/11pNZFGeCUw4wcH5DKv009NSgtwXqzrMI/view?usp=drive_link
Pradyumna Ponkshe	Mr. S. S. Chaudhari	Material Handling ASRS Robot(Autonomous Storage and Retrieval System)	Dassault Systems - La Fondation	-

GLIMPSES 2024 - 25



GLIMPSES 2024-25



ANUBHUTI 2024-25



Placement Highlights 2024-25

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Department of Computer Engineering

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SELECTED IN
amazon

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ISHA DESHMUKH **HARSHADA KULKARNI**

SELECTED IN
Infosys

"Techno-Social Excellence"
Marathwada Mitramandal's
INSTITUTE OF TECHNOLOGY
Lohgaon, Pune

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PLACEMENTS 2025



SIDDHESH SHELKE
SELECTED IN
LTIMindtree

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HARSH PATIL

SELECTED IN
NUMETRY TECHNOLOGIES

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JAYKUMAR RATHOD

SELECTED IN
KOHLER®

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PRADHYUMAN PATEL

SELECTED IN
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GLOBAL

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bitwise

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JANHAVI SURYAVANSHI
SELECTED IN
coditas

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PLACEMENTS 2025



VAISHNAVI VIKHE
SELECTED IN
Capgemini

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AKSHAY VAIDYA

SELECTED IN
EAGLEBYTE
SOLUTIONS PVT. LTD.

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**PRANALI
WALEKAR**



**MUKUL
BHENDARAKAR**

SELECTED IN
 **QUALITYKIOSK**
TECHNOLOGIES

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Lohgaon, Pune

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ANUSHKA DHAMDHERE

SELECTED IN
Tech Mahindra

PLACEMENTS 2025

BATCH PHOTO

2024 - 25



BATCH PHOTO

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<https://www.linkedin.com/in/mmit-lohgaon-b45855154>

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