D Y PATIL COLLEGE OF ENGINEERING, AKURDI, PUNE 44

DEPARTMENT OF INFORMATION TECHNOLOGY

NEWS LETTER NOVEMBER 2024

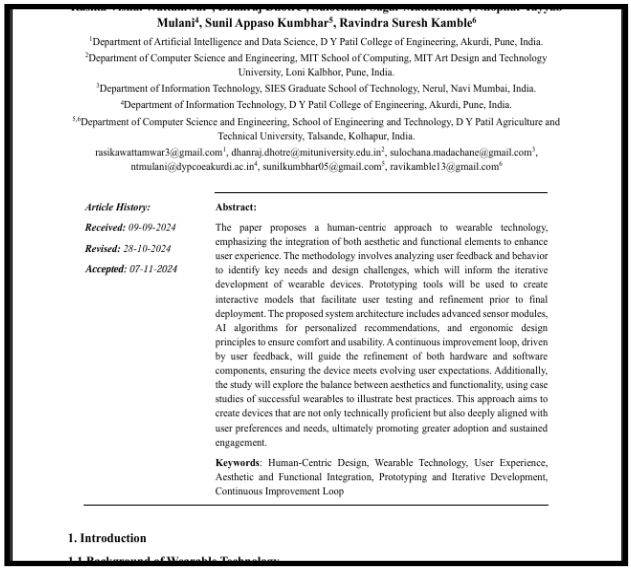
Faculty Achievements/Participations :

1.Dr Arati Jadhav Patil have successfully presented the paper entitled “implementation of Smart and Selective Gas Sensor System Empowered using ML over IOT platform” on November 2024

2.Dr.Arati Jadhav Patil have successfully presented the paper entitled “Enhancement in Multi Spectral Camera system for Precision Agriculture using NDVI Calculation Algorithm” on November 2024

3.Mrs Nilophar Mulani have successfully presented the paper entitled “Human Centric Design for wearable Technology: Bridging Aesthetic and Functional Aspects in Smart devices.” on November 2024

4.Mr Hiraman Jadhav have successfully presented the paper entitled “Human in Loop Machine Learning: A Paradigm Shift” on November 2024



Mulani[4], Sunil Appaso Kumbhar[5], Ravindra Suresh Kamble[6]

[1]Department of Artificial Intelligence and Data Science, D Y Patil College of Engineering, Akurdi, Pune, India.
[2]Department of Computer Science and Engineering, MIT School of Computing, MIT Art Design and Technology University, Loni Kalbhor, Pune, India.
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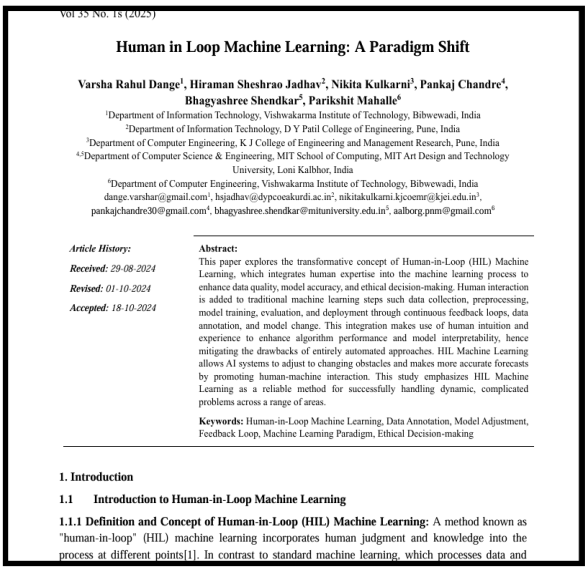
Received: *09-09-2024*
Revised: *28-10-2024*
Accepted: *07-11-2024*

Abstract:

The paper proposes a human-centric approach to wearable technology, emphasizing the integration of both aesthetic and functional elements to enhance user experience. The methodology involves analyzing user feedback and behavior to identify key needs and design challenges, which will inform the iterative development of wearable devices. Prototyping tools will be used to create interactive models that facilitate user testing and refinement prior to final deployment. The proposed system architecture includes advanced sensor modules, AI algorithms for personalized recommendations, and ergonomic design principles to ensure comfort and usability. A continuous improvement loop, driven by user feedback, will guide the refinement of both hardware and software components, ensuring the device meets evolving user expectations. Additionally, the study will explore the balance between aesthetics and functionality, using case studies of successful wearables to illustrate best practices. This approach aims to create devices that are not only technically proficient but also deeply aligned with user preferences and needs, ultimately promoting greater adoption and sustained engagement.

Keywords: Human-Centric Design, Wearable Technology, User Experience, Aesthetic and Functional Integration, Prototyping and Iterative Development, Continuous Improvement Loop

1. Introduction



Vol 35 No. 1s (2025)

Human in Loop Machine Learning: A Paradigm Shift

Varsha Rahul Dange[1], Hiraman Sheshrao Jadhav[2], Nikita Kulkarni[3], Pankaj Chandre[4], Bhagyashree Shendkar[5], Parikshit Mahalle[6]

[1]Department of Information Technology, Vishwakarma Institute of Technology, Bibwewadi, India
[2]Department of Information Technology, D Y Patil College of Engineering, Pune, India
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Article History:
Received: *29-08-2024*
Revised: *01-10-2024*
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Abstract:

This paper explores the transformative concept of Human-in-Loop (HIL) Machine Learning, which integrates human expertise into the machine learning process to enhance data quality, model accuracy, and ethical decision-making. Human interaction is added to traditional machine learning steps such data collection, preprocessing, model training, evaluation, and deployment through continuous feedback loops, data annotation, and model change. This integration makes use of human intuition and experience to enhance algorithm performance and model interpretability, hence mitigating the drawbacks of entirely automated approaches. HIL Machine Learning allows AI systems to adjust to changing obstacles and makes more accurate forecasts by promoting human-machine interaction. This study emphasizes HIL Machine Learning as a reliable method for successfully handling dynamic, complicated problems across a range of areas.

Keywords: Human-in-Loop Machine Learning, Data Annotation, Model Adjustment, Feedback Loop, Machine Learning Paradigm, Ethical Decision-making

1. Introduction

1.1 Introduction to Human-in-Loop Machine Learning

1.1.1 Definition and Concept of Human-in-Loop (HIL) Machine Learning: A method known as "human-in-loop" (HIL) machine learning incorporates human judgment and knowledge into the process at different points[1]. In contrast to standard machine learning, which processes data and

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Cite this paper as: Kalyan D.Bamane,Shanthi Kumaraguru, Deepali Gohil, Yogita Sinkar ,Arati Gaikwad, Dhiraj Sham Bhamare (2024) Enhancement in Multi Spectral Camera System for Precision Agriculture using NDVI Calculation Algorithm. *Frontiers in Health Informatics, 13* (3), 4728-4741

Abstract

Precision agriculture improves productivity, resources optimization, and sustainability in crops. However, despite having an elevated cost for commercial multispectral imaging systems, the current application of precision agriculture technologies in crop health monitoring has not been adopted by small and medium-sized farmers. Thus, this paper presents the design, development, and validation of an independently developed low-cost multispectral camera system that is affordable to use as an alternative in crop health monitoring. With the current system, use of readily available off-the-shelf components will be employed as a Raspberry Pi microcontroller and low-cost camera modules with an optical filter to capture in key bands of the spectrum such as Red, Green, Blue, and Near-Infrared. Calculations of vegetation indices, such as NDVI, will be made, offering real-time information relating to the health of the plants, water stress, and nutrient deficiencies. The system is highly accessible to users who are not nearly as technically oriented: farmers, for example. Field tests indicate that the system's spectral accuracy matches commercial ones, but at a fraction of the cost and therefore accessible to the smallholder. Consequently, it will improve crop yields, reduce wastage of resources, and promote sustainable farming practices through farmer decision-making based on data. This paper discusses the

Dr.Kalyan D.Bamane[1], Dr.Dipalee Chaudhrai, Mrs. Vaishali Kolhe , Mrs Dhanashree Phalke , Dr Arati Gaikwad Mrs.Ashlesha M.Pal

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[2]Assistant Professor, Department of Computer Engineering, D.Y.Patil College of Engineering, Akurdi
[3]Assistant Professor, Department of Computer Engineering, D.Y.Patil College of Engineering, Akurdi,
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[5]Assistant Professor, Department of Information Technology, D.Y.Patil College of Engineering, Akurdi,
6 student of 3rd Year Computer Engineering, D.Y.Patil College of Engineering, Akurdi, Pune, India
kdbamane@dypcoeakurdi.ac.in and ashleshapa467@gmail.com

Cite this paper as: Kalyan D.Bamane, Dipalee Chaudhrai,Vaishali Kolhe ,Dhanashree Phalke ,Arati Gaikwad, Ashlesha M.Pal (2024) Implementation of Smart and Selective Gas Sensor System Empowered using Machine Learning over IoT Platform. *Frontiers in Health Informatics, 13* (3),4712-4727

ABSTRACT

With the help of an internal sensor composed of hollow spheres of tin oxide coated in platinum, this stand-alone, selective gas sensor system offers wireless monitoring and Internet connectivity. At different concentrations, it reliably detects volatile organic compounds (VOCs). Real-time VOC identification is made possible using a machine learning model that has a 96.43% accuracy rate and a quick prediction speed of 310 µs. A low-power microcontroller and Bluetooth are used to connect the system, and real-time data can be accessed via an Androidapp or webpage that leverages cloud services. The system is validated and tested, enabling remote, self-sufficientapplications that progress the Internet of Things' gas sensing capabilities.

Keywords: *GAS, IoT, Wi-Fi, ARM and Temperature.*

1. INTRODUCTION

The introduction of the paper "Smart and Selective Gas Sensor System Empowered With Machine Learning Over IoT Platform" discusses the necessity for automated, real-time, and selective gas sensors in various industries like food safety, industrial safety, and air quality monitoring. Such sensors are required to be employed for a safe environment and to differentiate between VOCs.This paper focuses on the fact that designing smart systems requires interfacing gas sensors with wireless communication, cloud storage, and real-time monitoring through Internet of Things. However, the gas sensor technologies available today have selectivity, size, and durability issues. To enhance the VOC-detection selectivity of this study, machine learning techniques are merged with metal-oxide-based

“Paper Publication”

“Paper Publication”

Name of Faculty Coordinator : Mr Hiraman Jadhav

Dr Preeti Patil
Head of Department

D Y PATIL COLLEGE OF ENGINEERING, AKURDI, PUNE 44

DEPARTMENT OF INFORMATION TECHNOLOGY

NEWS LETTER NOVEMBER 2024

Faculty Achievements/Participations :

5.Mrs Amita Jajoo have successfully presented the paper entitled “Securing Trust in E-commerce: A Blockchain Approach to Product Authenticity” on November 2024

6.Mrs Amita Jajoo have successfully presented the paper entitled “Nearby Stall Navigator Application Using Flutter, Firebase and Augmented Reality” on November 2024

7.Mrs Himani Patel have successfully presented the paper entitled “Machine Learning models for Early Detection of Hepatic Disorders using clinical Data” on November 2024

8.Dr Latika Desai have successfully presented the paper entitled “AI Enabled Diagnostics solution for Eye Disease Detection and treatment Planning.” on November 2024

9. Dr Preeti Patil have submitted a research proposal on the ICSSR portal worth 30 Lakhs on 10th Nov 2024.

10. Dr Preeti Patil has Department Chairman for Campus Branding Cell, IT DYPCOE Pune In recognition of your contribution as an editorial board member to the journal “ International Journal of Trends in Emerging Research and Development” on November 2024.

Article Info

Article type:
Research

Article History:
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Keywords:
Hepatic Disorders, Machine Learning, Clinical Data, Early Detection, Predictive Modeling

ABSTRACT

Hepatic disarranges, which incorporate a wide extend of liver sicknesses, are a major world wellbeing issue since they are exceptionally common and can get more regrettable over time, driving to genuine conditions like cirrhosis and liver cancer. Early distinguishing proof is imperative for compelling administration and treatment, but it's still difficult to do since these disarranges are so complicated and the early signs are so gentle. This article talks around how to form and utilize progressed machine learning models to discover liver maladies early on utilizing clinical information. By utilizing machine learning strategies, we trust to move forward the precision of analyze and make it simpler for individuals to urge offer assistance when they require it, which is able lead to way better comes about for patients. A large set of clinical information, counting liver function tests, chemistry markers, and statistic data, is utilized within the think about. To figure in case somebody encompasses a liver issue, we utilize numerous sorts of machine learning models, such as back vector machines (SVM), choice trees, irregular woodlands, and profound learning neural systems. Measurements like precision, accuracy, review, and the range beneath the recipient working characteristic bend (AUC-ROC) are utilized to judge how well each show works. This lets us compare their capacity to form forecasts in a point by point way. Our inquire about appears that machine learning models can effectively discover patterns in clinical information that point to liver issues. A few models are exceptionally precise and dependable. In specific, the random woodland demonstrate does distant better;a much better;a higher;a stronger;an improved">a higher work of being precise and simple to get it. It gives us useful information almost how critical distinctive clinical characteristics are. Adding deep learning strategies too appears like a great thought for finding complicated nonlinear associations within the information, which would make acknowledgment indeed better. The ponder too talks approximately the problems that can happen when machine learning is utilized in therapeutic diagnostics.

Apply under	Major
Broad Research Domain	Education
Priority Area	Skilling Youth for Future Jobs
Title of the Research Proposal	An Analytical Framework for Preparing Youth for Future Job Markets Using Machine Learning
I. Personal Information of the Project Director (PD)	
1. Name of the Applicant (as mentioned in the official records of your Institution)	Preeti Suryakant Patil
2. Address for Official communication :	D. Y. Patil College of Engineering, D. Y. Patil Educational Complex, Sector 29, Nigdi Pradhikaran, Akurdi, Pune,411044. D Y Patil College of Engineering , Akurdi, Pune 7276555582 pspatil@dypcoeakurdi.ac.in Maharashtra 411044
3. Permanent Address :	Same as Communication Address
4. Date of Birth (DD/MM/YYYY) :	14/12/1977
5(a). Mother's Name :	Uma H Ghorpade
5(b). Father's Name :	Hanumanth Rao Ghorpade
6. Employer Details :	Designation: Associate Professor Employment status: : Permanent Name: D Y PATIL COLLEGE OF ENGINEERING, AKURDI,PUNE Address: D. Y. Patil College of Engineering,D. Y. Patil Educational Complex,Sector 29, Nigdi Pradhikaran, Akurdi, Pune,411044.

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CERTIFICATE OF EDITORIAL BOARD MEMBERSHIP

DECLARATION

We hereby certify that

Dr. Preeti Patil

Associate Professor and Head, Department Chairman for Campus Branding Cell, Information Technology, D.Y. Patil College of Engineering, Akurdi, Pune, Maharashtra, India

In recognition of your contribution as an editorial board member to the journal

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Authorized By:
Publisher: Mr. Vipin

Name of Faculty Coordinator : Mr Hiraman Jadhav

Dr Preeti Patil
Head of Department

D Y PATIL COLLEGE OF ENGINEERING, AKURDI, PUNE 44

DEPARTMENT OF INFORMATION TECHNOLOGY

NEWS LETTER NOVEMBER 2024

Faculty Achievements/Participations :

11.Mrs Suvarna Sonone has participated and successfully completed AICTE Training and Learning ATAL Academy The Revolution of Large Language Models (LLMs) in Artificial Intelligence at VIDYA JYOTHI INSTITUTE OF TECHNOLOGY organized by Vidya Jyoti Institute of Technology DYPCOE Pune from 18/11/2024 to 23/11/2024

12.Arati Shivaji Jadhav Patil . Introduction to OpenAI GPT Models The certificate is awarded for successfully completing the course on November 20, 2024

13.Arati Shivaji Jadhav Patil . OpenAI Generative Pre-trained Transformer 3 (GPT-3) for developers The certificate is awarded for successfully completing the course on November 23, 2024

14. Arati Shivaji Jadhav Patil . Generative AI Landscape The certificate is awarded for successfully completing the course on November 18, 2024

"FDP & Training Certificates"

Name of Faculty Coordinator : Mr Hiraman Jadhav

Dr Preeti Patil
Head of Department

D Y PATIL COLLEGE OF ENGINEERING, AKURDI, PUNE 44

DEPARTMENT OF INFORMATION TECHNOLOGY

NEWS LETTER NOVEMBER 2024

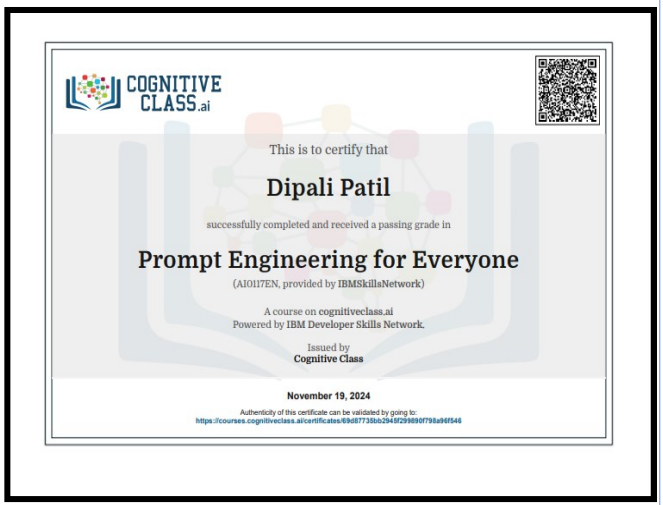
Faculty Achievements/Participations :

14.Arati Shivaji Jadhav Patil for successfully completing the course AI-first Software Engineering on November 21, 2024

15.Arati Shivaji Jadhav Patil for successfully completing the course AI-first Software Engineering on November 21, 2024

16.Krutika Bang, Mrs Dipali Patil successfully completed and received a passing grade in Deep Learning Fundamentals on 25 November 2024

17.Dipali Patil ,Mrs Krutika Bang successfully completed and received a passing grade in Prompt Engineering for Everyone on 19 November 2024.



"FDP & Technical Course Certificates"

Name of Faculty Coordinator : Mr Hiraman Jadhav

Dr Preeti Patil
Head of Department

D Y PATIL COLLEGE OF ENGINEERING, AKURDI, PUNE 44

DEPARTMENT OF INFORMATION TECHNOLOGY

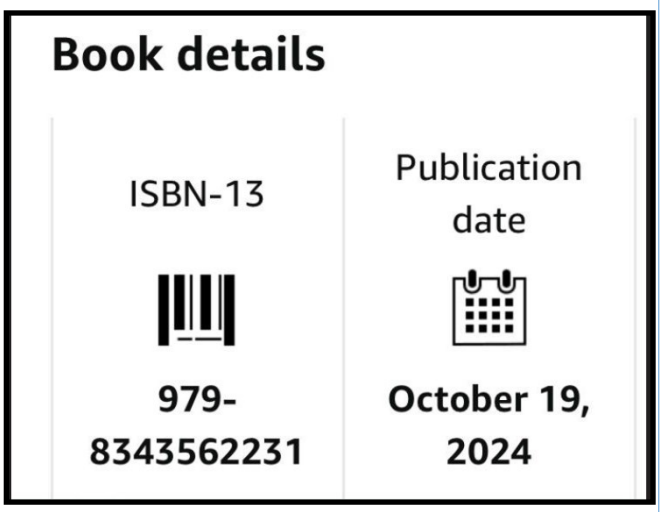
NEWS LETTER NOVEMBER 2024

Faculty Achievements/Participations :

18.Mrs Krutika Bang for participating in the training program on the Data Science with Python conducted by talentNext From 11th Nov to 29th Nov 2024.

19 .Mrs Krutika Bang for participating in the training program on the Dot Net Full Stack conducted by talentNext From 11th Nov to 29th Nov 2024.

20.Dr Latika Deshai has book Published on IoT Fundamentals and Advance Applications on November 2024.



"FDP & Technical Course Certificates"

Name of Faculty Coordinator : Mr Hiraman Jadhav

Dr Preeti Patil
Head of Department

D Y PATIL COLLEGE OF ENGINEERING, AKURDI, PUNE 44

DEPARTMENT OF INFORMATION TECHNOLOGY

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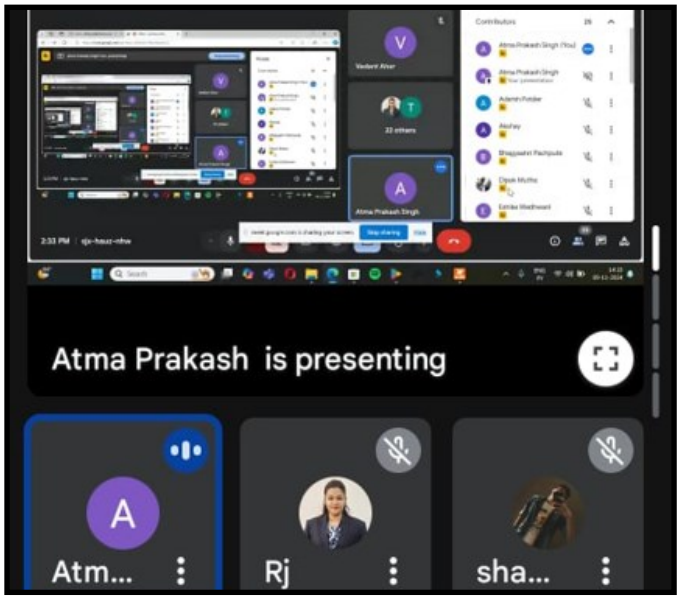
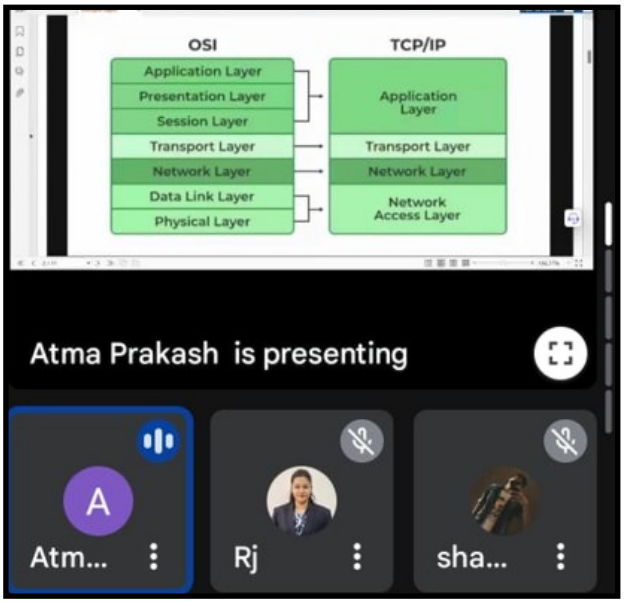
Department Activity :

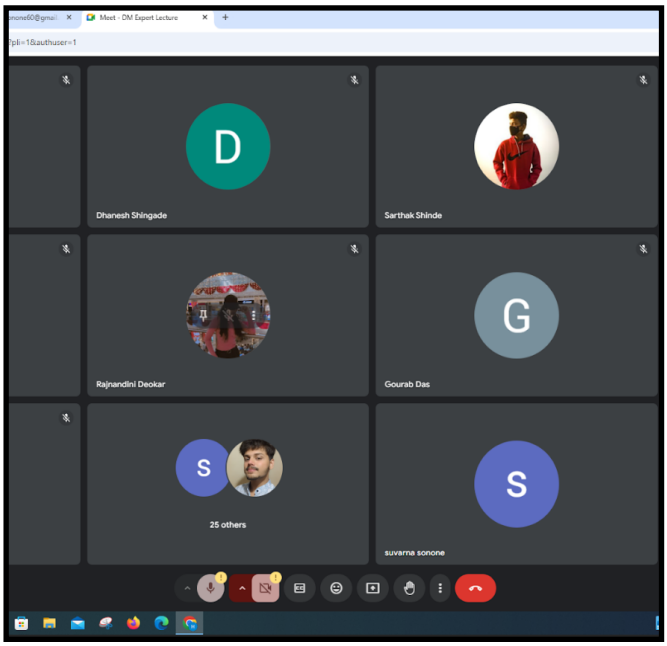
1.Department of Information Technology Organized Expert session on Transport Layer Services and Protocol for the Subject Basic Computer Network on 9th Nov 2024.

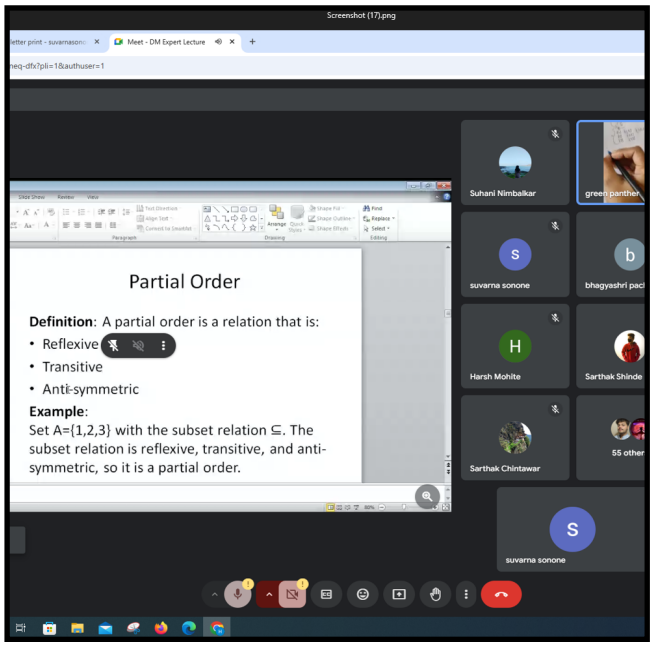




"Poster Presentation Program"

2.Department of Information Technology Organized Expert session on Function and Relation with Hash Diagram for the Subject Discrete Mathematics on 9th Nov 2024.





Name of Faculty Coordinator : Mr Hiraman Jadhav

Dr Preeti Patil
Head of Department

D Y PATIL COLLEGE OF ENGINEERING, AKURDI, PUNE 44

DEPARTMENT OF INFORMATION TECHNOLOGY

NEWS LETTER NOVEMBER 2024

Student Achievements/Participations :

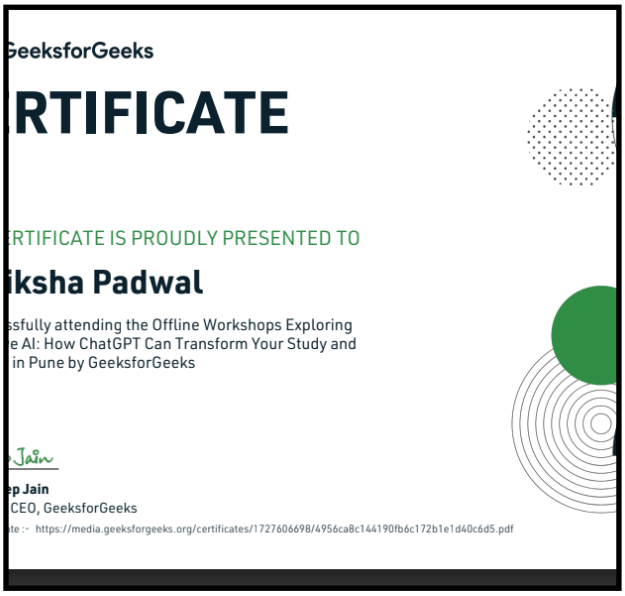
1.Ms Shravani Phalke has successfully completed the course on Exploring Generative AI Chat GPT on Nov 2024

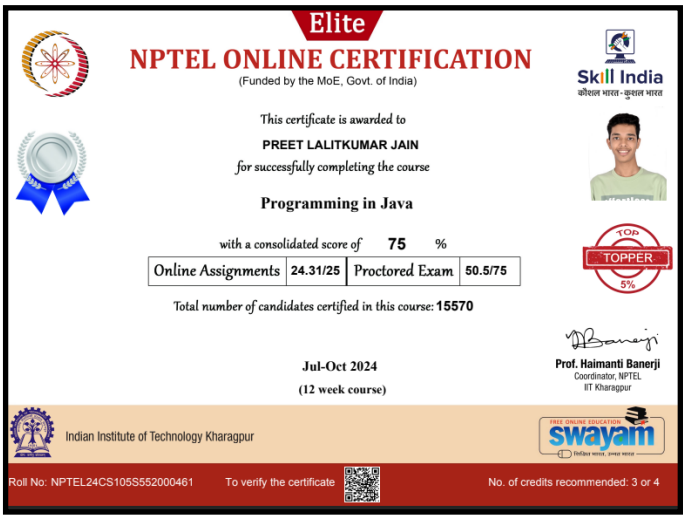
2.Ms.Pratiksha Padwal for successfully attending the Offline Workshops Exploring

Generative AI: How ChatGPT Can Transform Your Study and Creativity in Pune by Geeksfor-Geeks on Nov 2024.

3.Mr.Preeti Jain for successfully completing the course Programming in Java With consolidated score of 75% on Nov 2024.

4.Ms.Shravani Phalke has Successfully completed python Full Stack on 23rd Nov 2024.





"Student Achievements Certificates"

Name of Faculty Coordinator : Mr Hiraman Jadhav

Dr Preeti Patil
Head of Department