

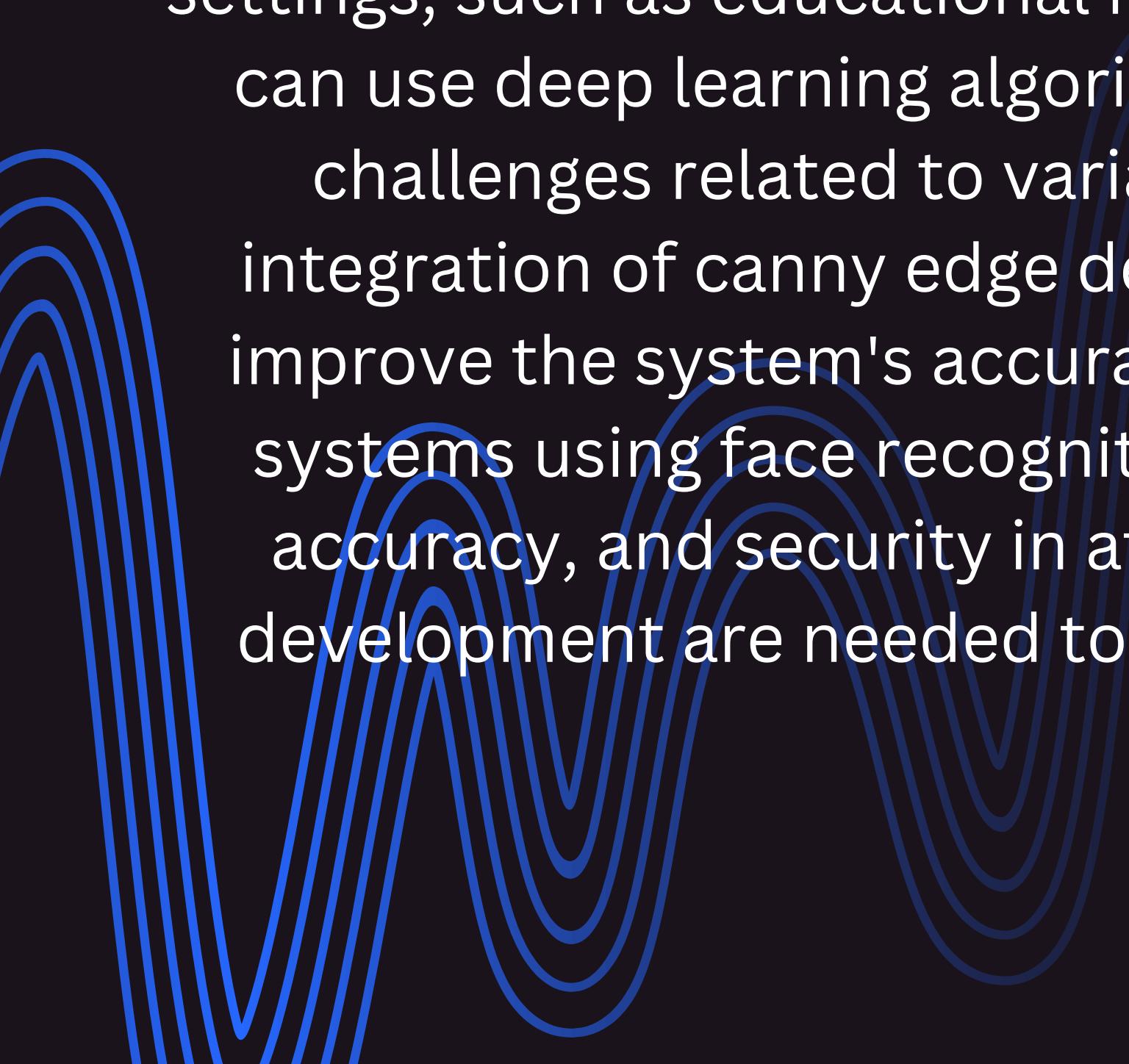


LOVELY  
PROFESSIONAL  
UNIVERSITY

# FACE RECOGNITION ATTENDANCE SYSTEM

Track attendance record using  
face detection methodology.

# INTRODUCTION



Our face recognition system can be used to track attendance in various settings, such as educational institutions, workplaces, and events. The system can use deep learning algorithms and multi-modal approaches to address challenges related to variations in lighting, pose, and expression. The integration of canny edge detection and KNN algorithms can significantly improve the system's accuracy, speed, and reliability. Overall, attendance systems using face recognition have the potential to enhance efficiency, accuracy, and security in attendance tracking, but further research and development are needed to ensure the ethical and responsible use of the technology.

# Problem Foundation



- To develop an automated attendance system using face recognition technology that can accurately identify and mark attendance for individuals in various settings.
- To design a user-friendly interface and provide a complete user manual for the software developed to ensure ease of use for the end-users.
- To improve the efficiency and reliability of attendance tracking by integrating the canny edge detection algorithm and KNN algorithm in the face recognition system.
- To test and validate the system's accuracy and reliability under various conditions, including variations in lighting, pose, and expression.

# METHODOLOGY

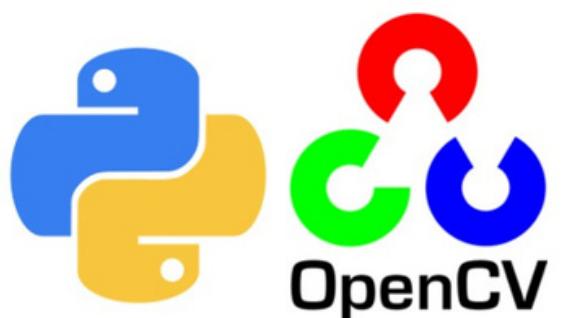


- The first objective is to develop a reliable attendance system using facial recognition technology, which is achieved by integrating a canny edge detection algorithm and KNN algorithm into the system.
- The second objective of improving the security of the attendance system was achieved by incorporating multi-modal biometric authentication, which uses multiple biometric traits to verify the identity of individuals.
- The third objective of automating the attendance tracking process is achieved by developing an automated system that eliminates the need for manual intervention.

# TOOLS & TECH USED

## Languages Used

- Python
- HTML
- CSS
- JS



## Libraries Used

- PANDAS
- KNN
- FLASK
- OS
- OpenCV

# Project Timeline

FEBRUARY

Conduct Research and  
Propose Methodology

MARCH

- Develop system design and architecture .
- Complete implementation of the system
- Fix Bugs and issues

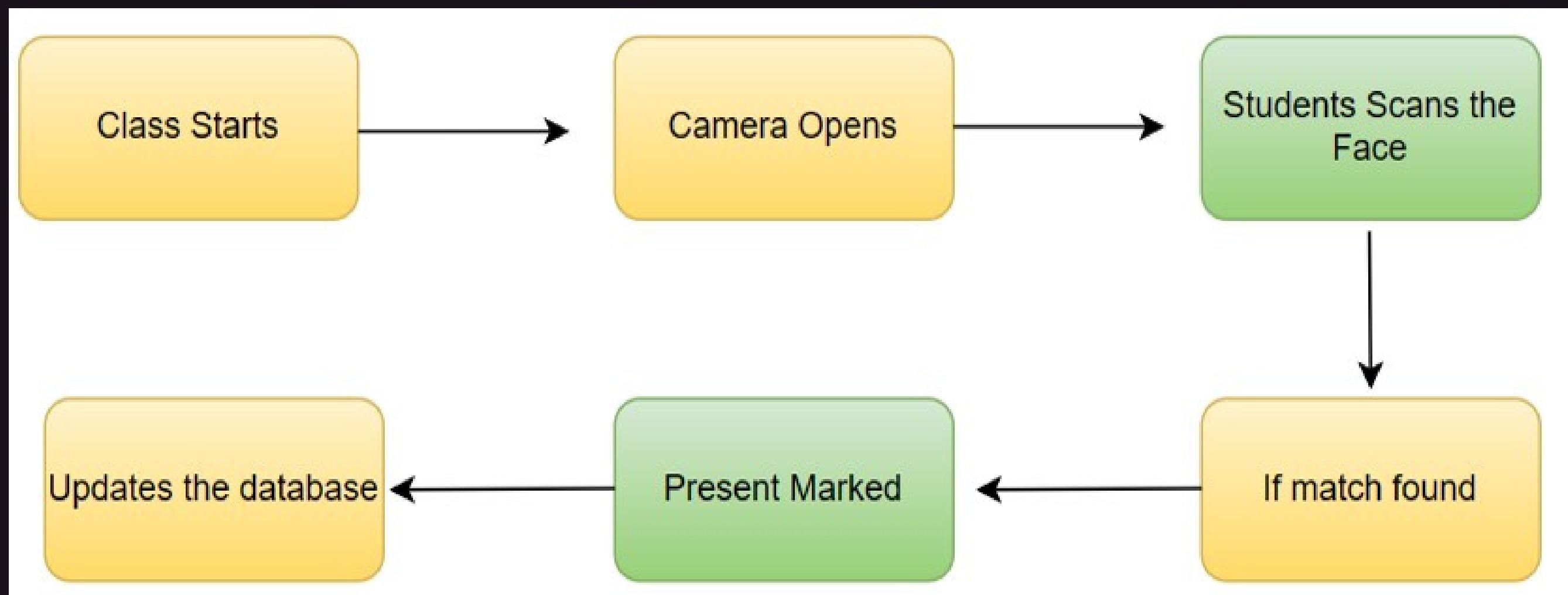
APRIL (1ST HALF)

- Finalize system design and implementation •
- Develop user manual and any necessary documentation •
- Conduct final testing and quality assurance checks

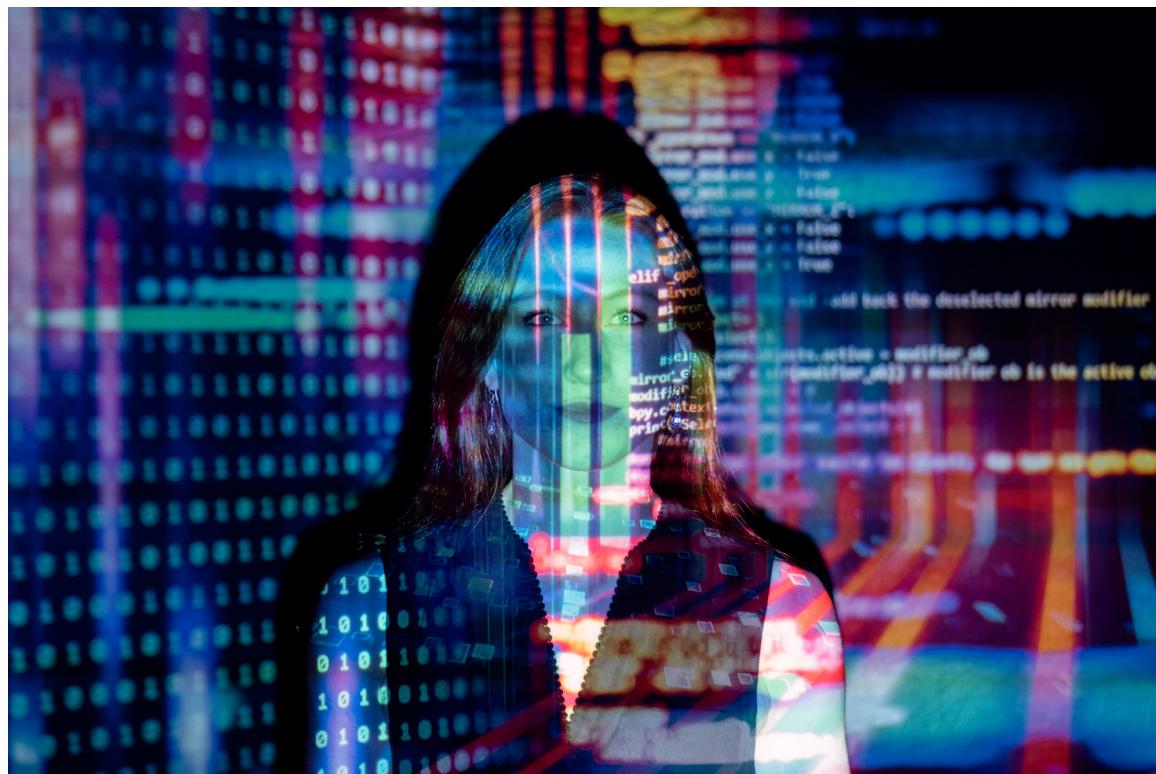
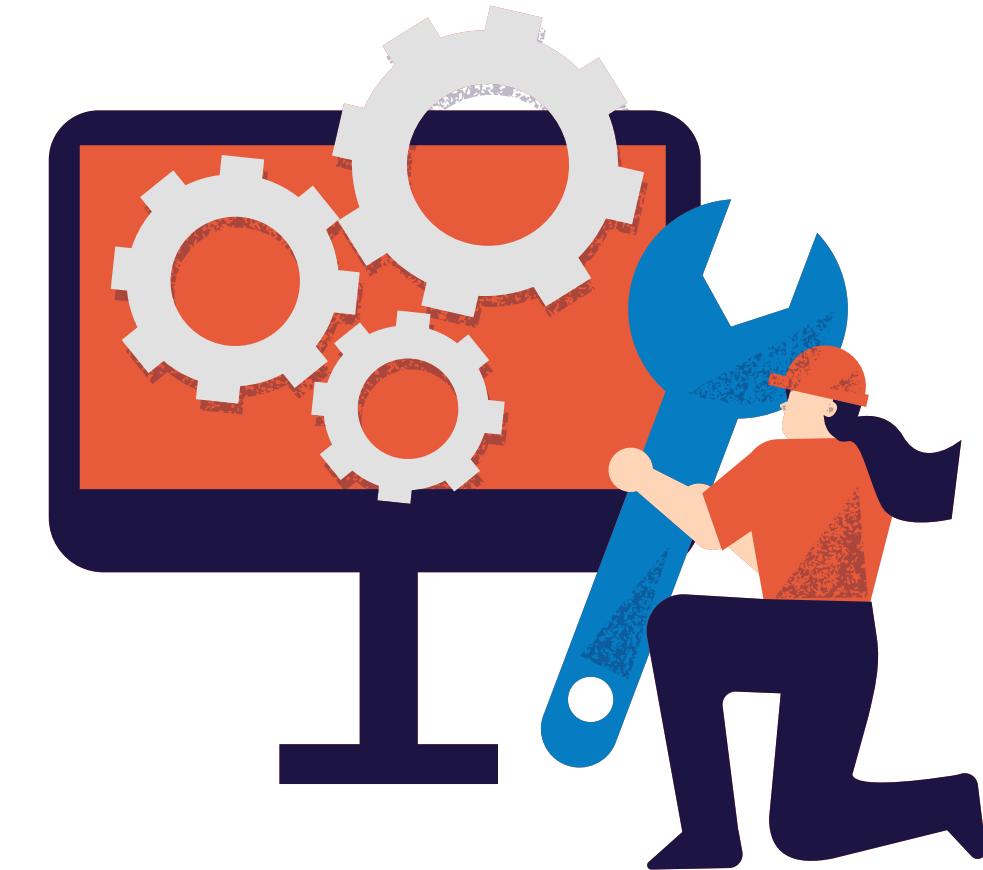
APRIL (2ND HALF)

- Prepare project deliverables and outcomes •
- Submit project for evaluation

# PROCESS FLOW DIAGRAM

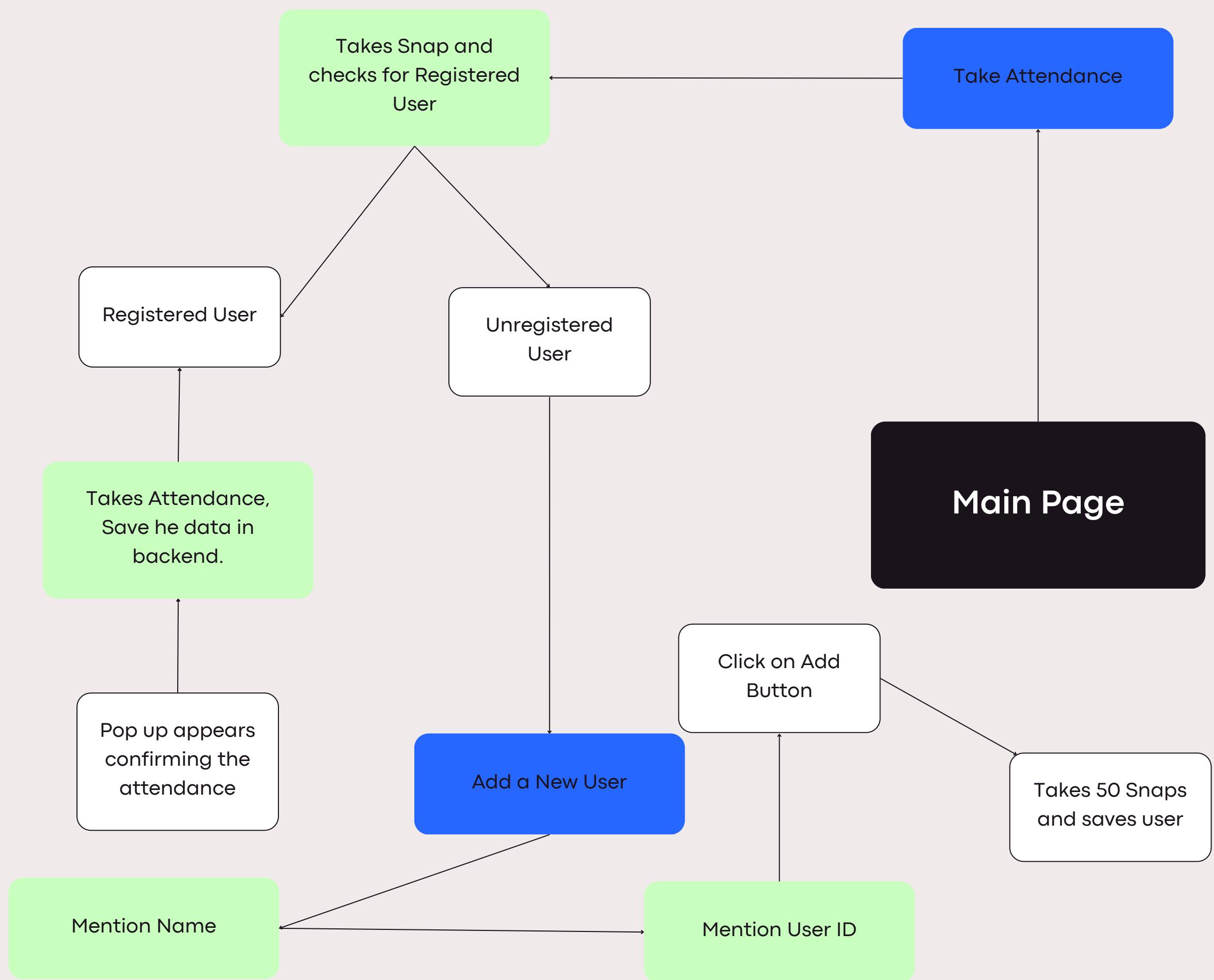


# Project Working



- Canny edge can be used as a preprocessing step to enhance the input image before applying a face detection algorithm. By extracting the edges, the Canny algorithm can help highlight the boundaries and features of faces, making them more distinguishable for subsequent face detection techniques.
- The edges can provide valuable information about the facial structure, such as the contour of the face, eyes, nose, and mouth, which can aid in accurate face localization and recognition.
- The KNN algorithm's role in face detection lies in the classification of image regions as faces or non-faces based on the learned information from the training dataset.
- By leveraging the features extracted from the regions of interest, KNN can make decisions based on the similarity between the unknown samples and the labeled training data, thus aiding in the identification of faces in an image.

# Flow Diagram of our Attendance Marking System



# Project Functioning

Add New User ⓘ

Enter New User Name\*

Enter New User Id\*

Add New User

Total Users in Database: {{totalreg}}

Take Attendance

Home Add User LPU LPU LIVE About

New User Registration

Face Recognition Based Attendance System

Take Attendance

S No	Name	ID	Time
{{ i+1 }}	{{ names[i] }}	{{ rolls[i] }}	{{ times[i] }}

Front - End View

## Project Functioning

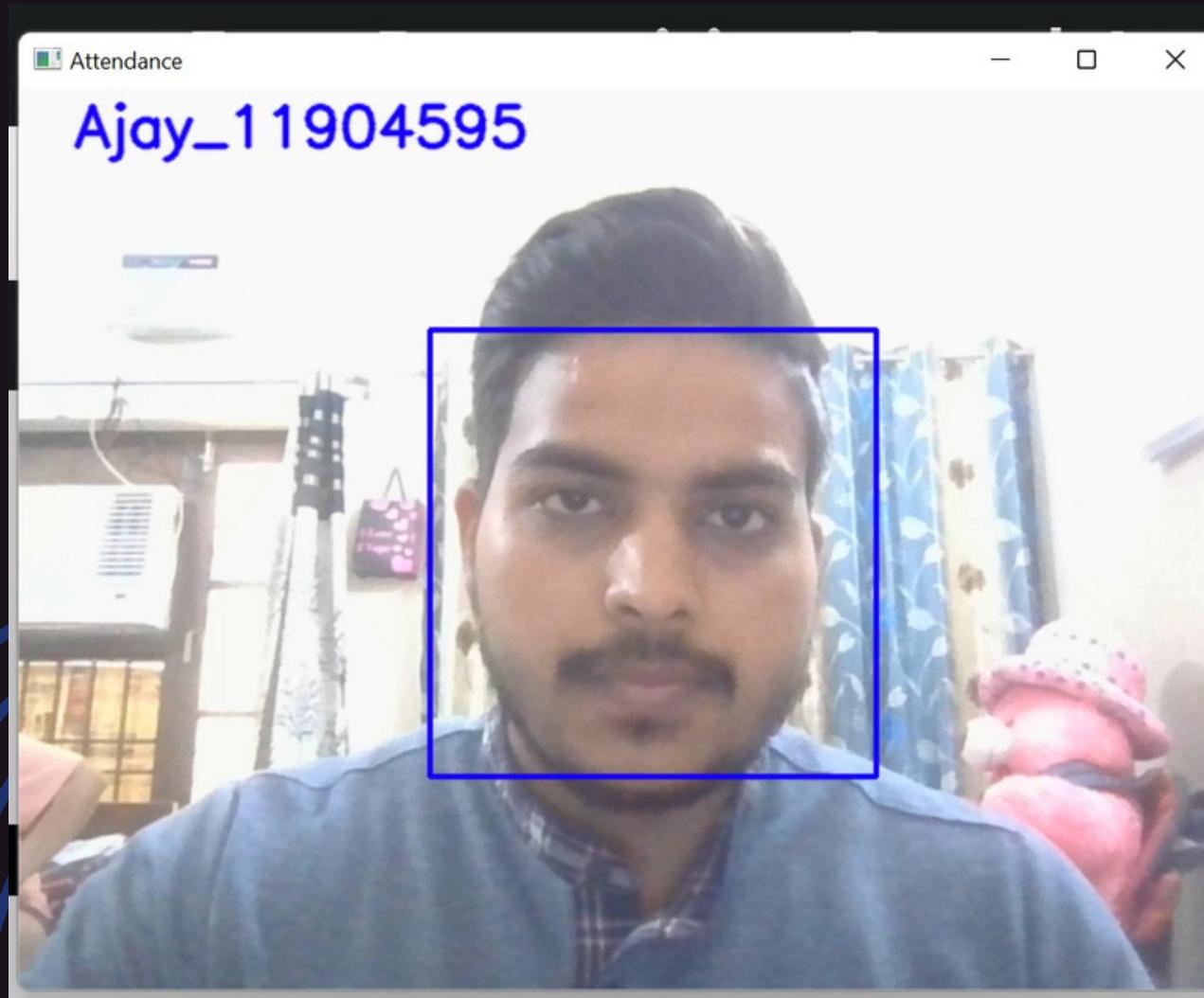
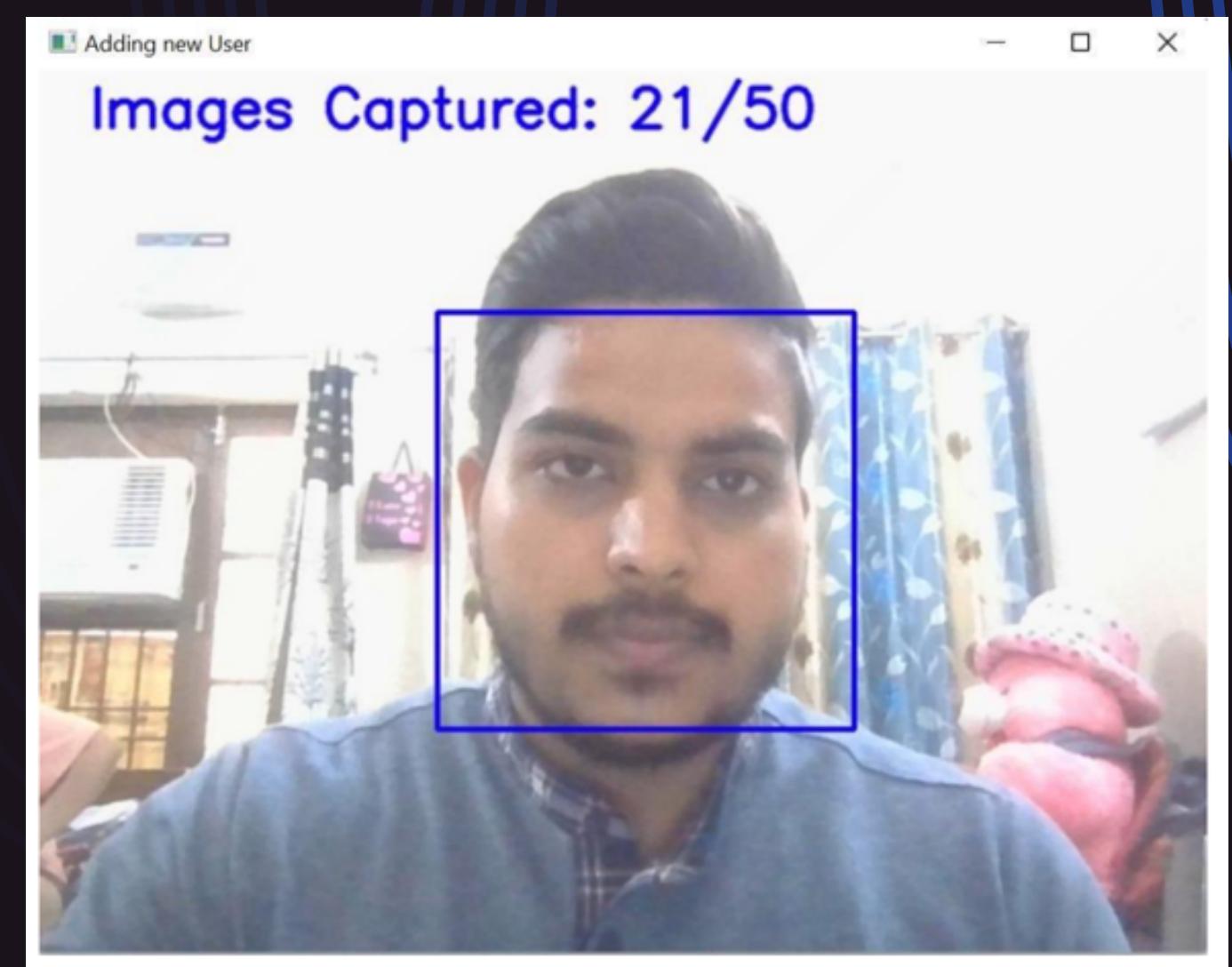


Image Capturing Process



Student Identification Process

# Project Functioning

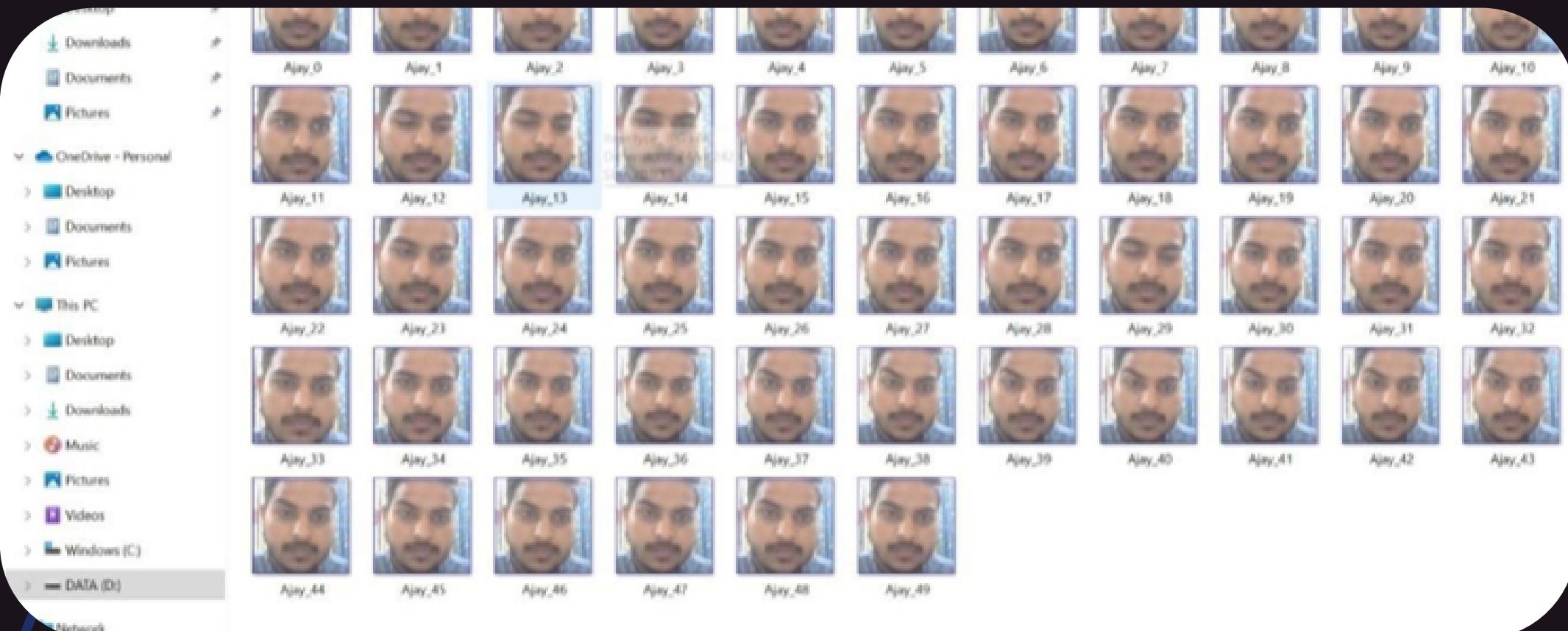
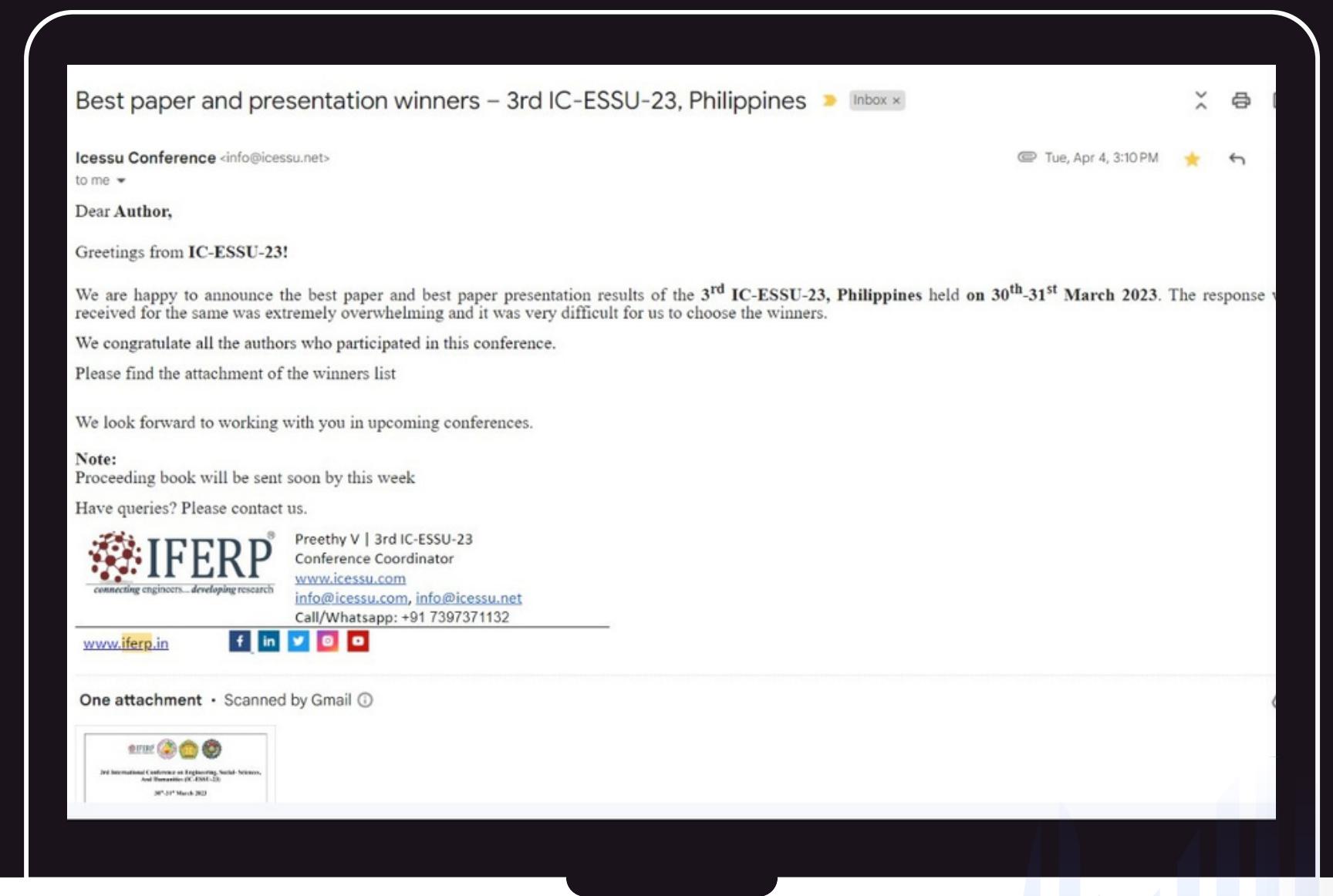


Image Stored

Name	Roll	Time
Ajay	11904595	14:10:53
4		
5		
6		
7		
8		
9		
10		
11		

Database Storage

# BEST Research Paper



DEEP LEARNING-BASED APPROACH FOR POWER MINIMIZATION IN MULTI-CARRIER  
‘NOMA WITH SWIPT  
*K Neela Venkata Sriya*

## BEST PAPER PRESENTATION

Machine Learning Technique to Classify EMG Signal for Diabetes Person  
*Muhammad Fathi Yakan Zulkifli*

## TECHNICAL SESSION- IA

### BEST PAPER

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*Jerwin F. Deysolong*

## BEST PAPER PRESENTATION

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*Shalini Wanlhade*

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### BEST PAPER

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UPRIGHT-DIPPING HIGHWALL IN A COAL MINING AREA  
*Lintang Putra Sadewa*

## TECHNICAL SESSION- II A

### BEST PAPER

Face Recognition-Based Attendance Management: A Systematic Literature Review  
*Lalit Kumar*

## BEST PAPER PRESENTATION

ASSESSMENT OF CARBON FOOTPRINTS IN MACHINE LEARNING  
*S SASIKALA*

## TECHNICAL SESSION- III

# Research Paper Acceptance Status

2 of 18 < > x

Congratulations, Your Abstract is Accepted! Abstract ID:3rd ICESU\_MAN\_0326, 3rd IC-ESSU-23, Philippines Inbox x

**I** Icessu Conference <info@icessu.net>  
to me ▾ Wed, Mar 15, 11:28 AM ★

Dear Lalit Kumar,

Greetings from IC-ESSU-23!

It's a pleasure to inform you that your Abstract title "**Face Recognition-Based Attendance Management: A Systematic Literature Review**" is accepted for Physical/Virtual presentation in our **3rd International Conference on Engineering, Social Science and Humanities (IC-ESSU-23)** which is scheduled on **30<sup>th</sup> -31<sup>st</sup> March 2023** in the **Philippines** organized by **Institute for Engineering Research and Publication (IFERP) Philippines Society**.

Enclosed is the acceptance letter.

Registration link: <https://www.technoarete.org/payment/>

**Registration Procedure:**

- 1.Click the registration link
- 2.Select INR and enter the amount in **INR 4000 (Virtual Presentation)** fill the form double click confirm and checkout.
- 3.After entering the order details page,below using Card proceed the payment

In case you are going for a **Bank Transfer/Google pay/phone pe** kindly contact us, we will guide you. .

For documentation purposes please share the screenshot of the payment proof.

**Slot Registration Deadline: 19th March 2023**

***Don't miss out on this opportunity to take part in the conference and learn from the experts.***

Looking forward to seeing you at the conference.

Have queries? Please contact us.

 Preethy V | 3rd IC-ESSU-23  
Conference Coordinator

# Letter Of Acceptance

**IC-ESSU**  
IFERP Scopus

**3<sup>rd</sup> International Conference on Engineering, Social- Sciences, And Humanities (IC-ESSU-2023)**  
**Hybrid conference**  
**30<sup>th</sup> & 31<sup>st</sup> March-2023 | Manila, Philippines**

**Ref No : 21200**  
**Date : 15/03/2023**  
**Conference Secretariat - Philippines**

**Letter of Acceptance**

**Abstract ID:** [3rd ICESSU\\_MAN\\_0326](#)

**Paper Title :** [Face Recognition-Based Attendance Management: A Systematic Literature Review](#)

**Author Name :** [Lalit Kumar](#)

**Co-Author Name :** [Dinesh Kumar, Ajay Kumar Gupta, Harsh Medhavi, Yash Saxena, Aryan Saxena](#)

**Institution:** [Lovely Professional University, India](#)

**Dear Lalit Kumar,**  
**Congratulations !**

The scientific reviewing committee is pleased to inform your article "**Face Recognition-Based Attendance Management: A Systematic Literature Review**" is accepted for Oral/Poster Presentation at " IC-ESSU-2023 " on **30th & 31st March-2023 at Manila, Philippines**. The Paper has been accepted after our double-blind peer review process and plagiarism check.

**3<sup>rd</sup> International Conference on Engineering, Social- Sciences, And Humanities (IC-ESSU- 2023) proceedings series will be submitted to the Web of Science Book Citation Index (BkCI) and to SCOPUS for evaluation and indexing.**

Name of the Journal	Indexing and ISSN
International Journal of Communication Networks and Information Security	Scopus, ISSN: 2073-607X
International Journal on Recent and Innovation Trends in Computing and Communication	Scopus, ISSN: 2321-8169
International journal of Intelligent Systems and Applications in Engineering	Scopus, ISSN: 2147-6799
Applied Mathematics & Information Sciences	Scopus, ISSN 1935-0090 (print) ISSN 2325-0399 (online)
Journal for ReAttach Therapy and Developmental Diversities	Scopus, ISSN: 2589-7799

Authors are recommended to proceed for registration to confirm their slots in relevant scientific sessions by following the link given.

<https://icessu.com/conference-registration.php>

For further more details and other affiliated journals feel free to contact us to:  
[info@icessu.com](mailto:info@icessu.com)

Registration Guidelines : <https://icessu.com/registration-guidelines.php>

Event Page: <https://icessu.com>

Note: Kindly send us the payment details and registration form to the official mail id of the event before last date of registration.



Thanks and  
Regards,  
Project Manager  
ICESSU-2023.

## Academic Partners



# Thank You