



FINAL YEAR PROJECT • B.TECH COMPUTER SCIENCE

Face Recognition Attendance System

Contactless classroom attendance with deep learning

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02 Agenda

01 Introduction

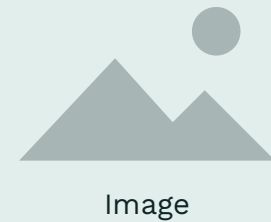
02 Literature & Gap

03 Proposed System

04 Implementation

05 Results

06 Conclusion



SECTION 01

INTRODUCTION

KEY IDEA

A 60-student roll call can take 8–10 minutes of every lecture.

Why this project matters

05 | Introduction

- ▶ Attendance is recorded manually in most classrooms
- ▶ Roll calls waste teaching time and allow proxies
- ▶ Face recognition can mark attendance in seconds
- ▶ We built a camera-based system with a teacher dashboard

CONTEXT

Manual registers are easy to proxy and hard to analyse.

06 | Problem statement

01

Lost time

Roll calls take minutes of every lecture.

02

Proxy attendance

Signatures and verbal responses are easy to fake.

03

No analytics

Paper registers make trends hard to see.

SECTION 02

LITERATURE & GAP

08 Literature survey

Study	Approach	Limitation
Viola–Jones	Haar cascade detection	Weak in poor lighting
FaceNet	Deep embeddings	Needs GPU for training
RFID systems	Card tapping	Cards can be shared

Representative summaries — replace with your own citations.

09 Existing vs proposed system

Existing system

- Manual roll call or registers
- Proxy attendance possible
- Reports compiled by hand

vs

Proposed system

- Automatic camera-based marking
- Proxy-resistant face matching
- Instant reports and exports

SECTION 03

PROPOSED SYSTEM

11 System architecture

1 Capture Classroom camera sends frames

2 Detect MTCNN finds faces in each frame

3 Recognise Embeddings matched against enrolled students

4 Record Attendance saved with time and subject

12 | Technology stack

01

Python

Core processing
pipeline

02

OpenCV + MTCNN

Face detection

03

FaceNet

Face embeddings
and matching

04

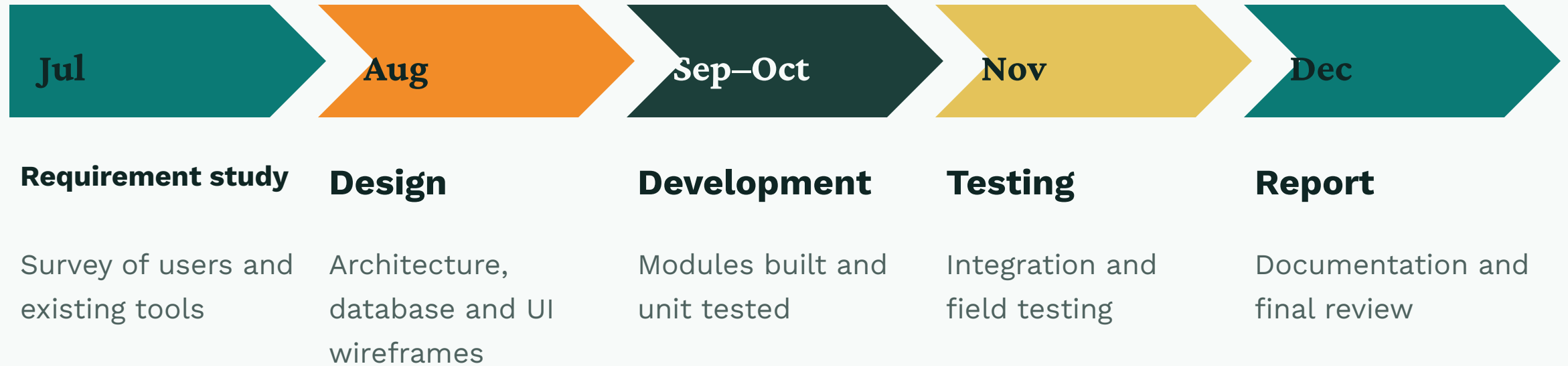
Django

Teacher dashboard
and reports

SECTION 04

IMPLEMENTATION

14 | Project timeline



15 | Implementation snapshots



Image 1

Enrolment screen

Students registered with 5 sample images



Image 2

Live recognition

Bounding boxes with names in real time

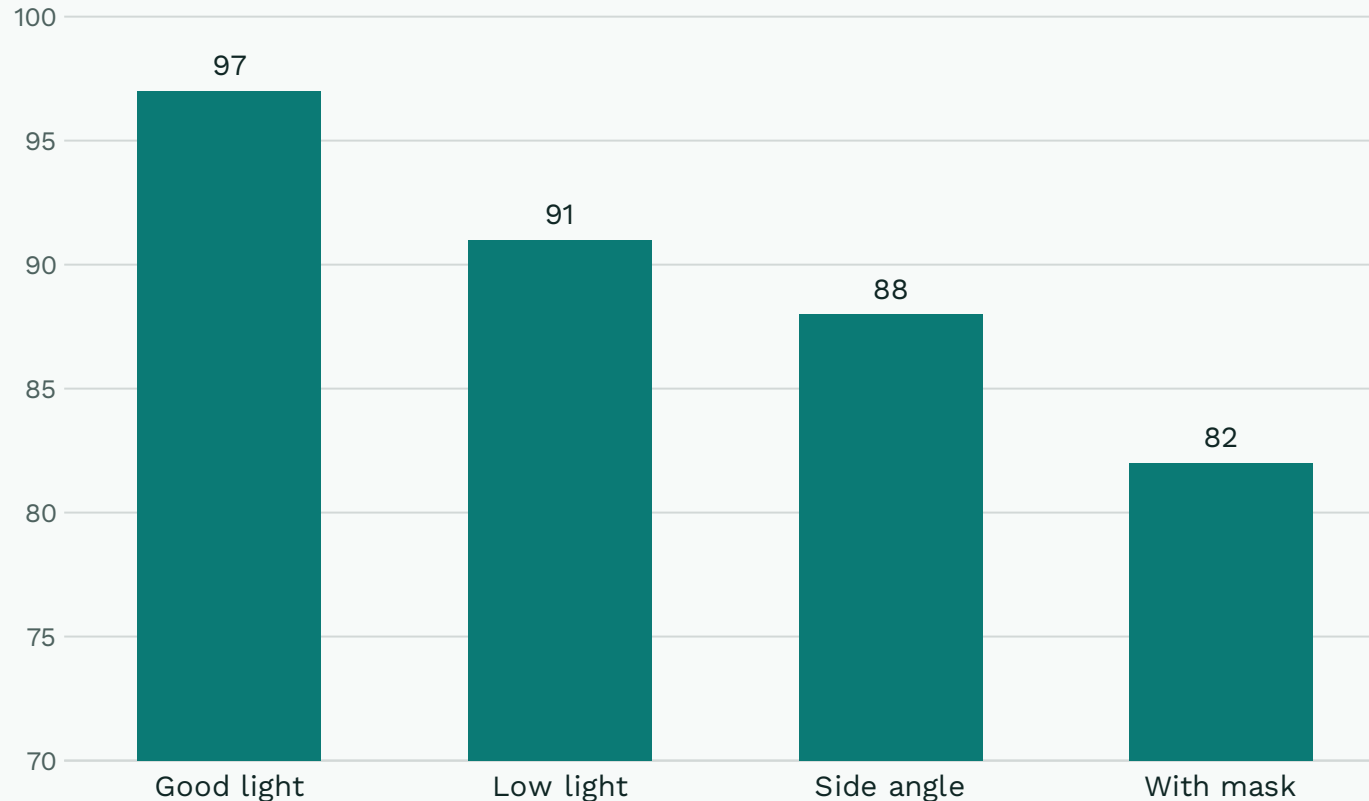


Image 3

Reports

Subject-wise attendance export

16 Results



Sample data for illustration — replace with your own figures.

97%

accuracy in normal lighting

Accuracy stays high in normal classrooms and drops gracefully in harder conditions.

17 | Key outcomes

97%

recognition accuracy

15 s

to mark a full class

0

raw photos stored

Figures from our test setup (sample data).

18 | Conclusion

- ▶ Face recognition makes attendance fast and proxy-resistant
- ▶ Embeddings keep the system privacy-friendly
- ▶ Teachers get reports without manual work

19 | Future scope

01

Mobile app

Students check their own attendance

02

Edge device

Run fully on a Raspberry Pi

03

Liveness check

Stop photo-based spoofing

Thank you

Questions and suggestions are welcome.

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