



CREST

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

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04

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05

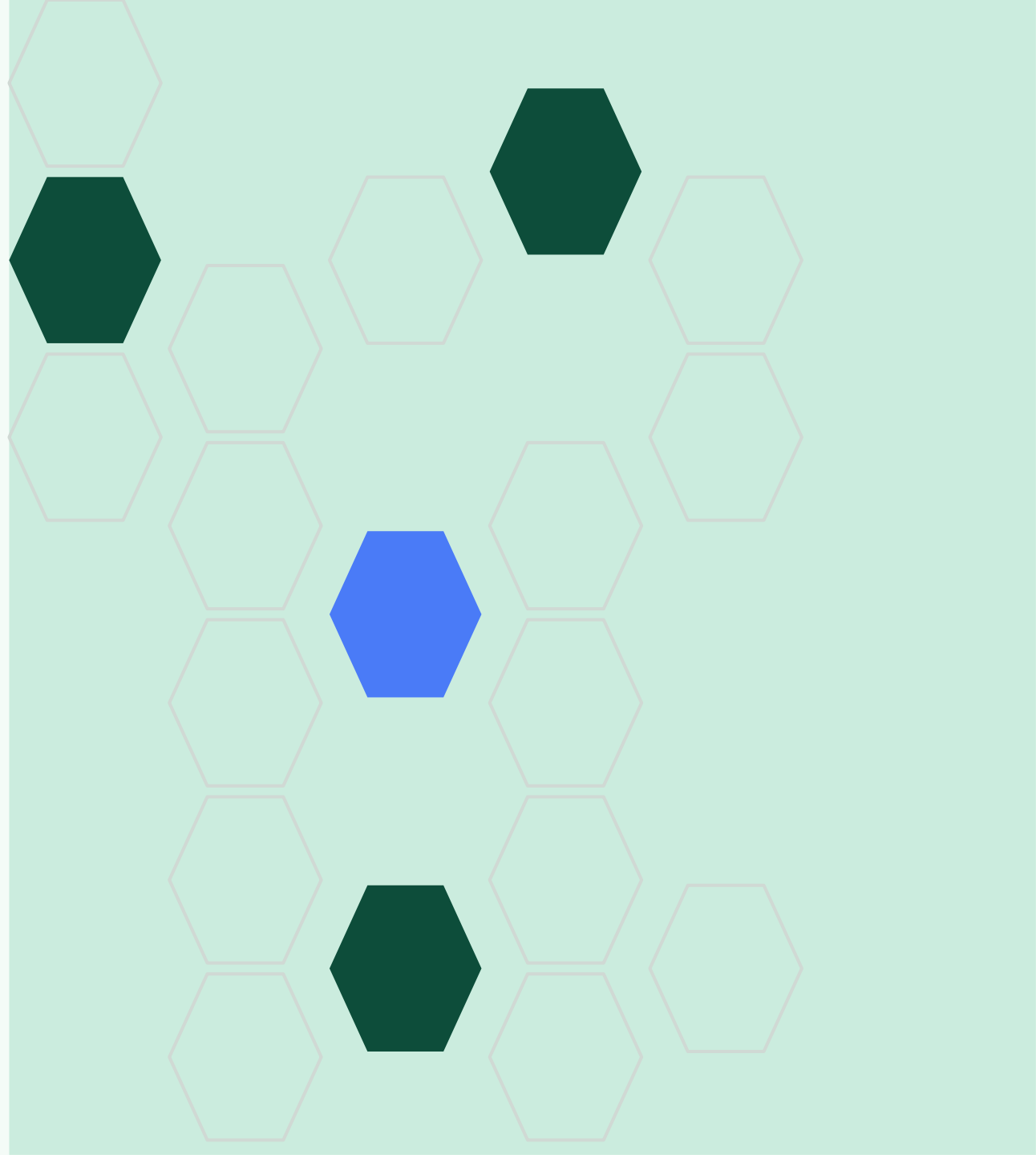
Results

06

Conclusion

01

INTRODUCTI ON





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

Why this project matters



05 | Problem statement

1

Lost time

Roll calls take minutes of every lecture.

2

Proxy attendance

Signatures and verbal responses are easy to fake.

3

No analytics

Paper registers make trends hard to see.



06 | Objectives

- Detect and recognise faces from a classroom camera
- Mark attendance automatically with a timestamp
- Generate subject-wise reports for teachers
- Respect privacy: store embeddings, not raw photos



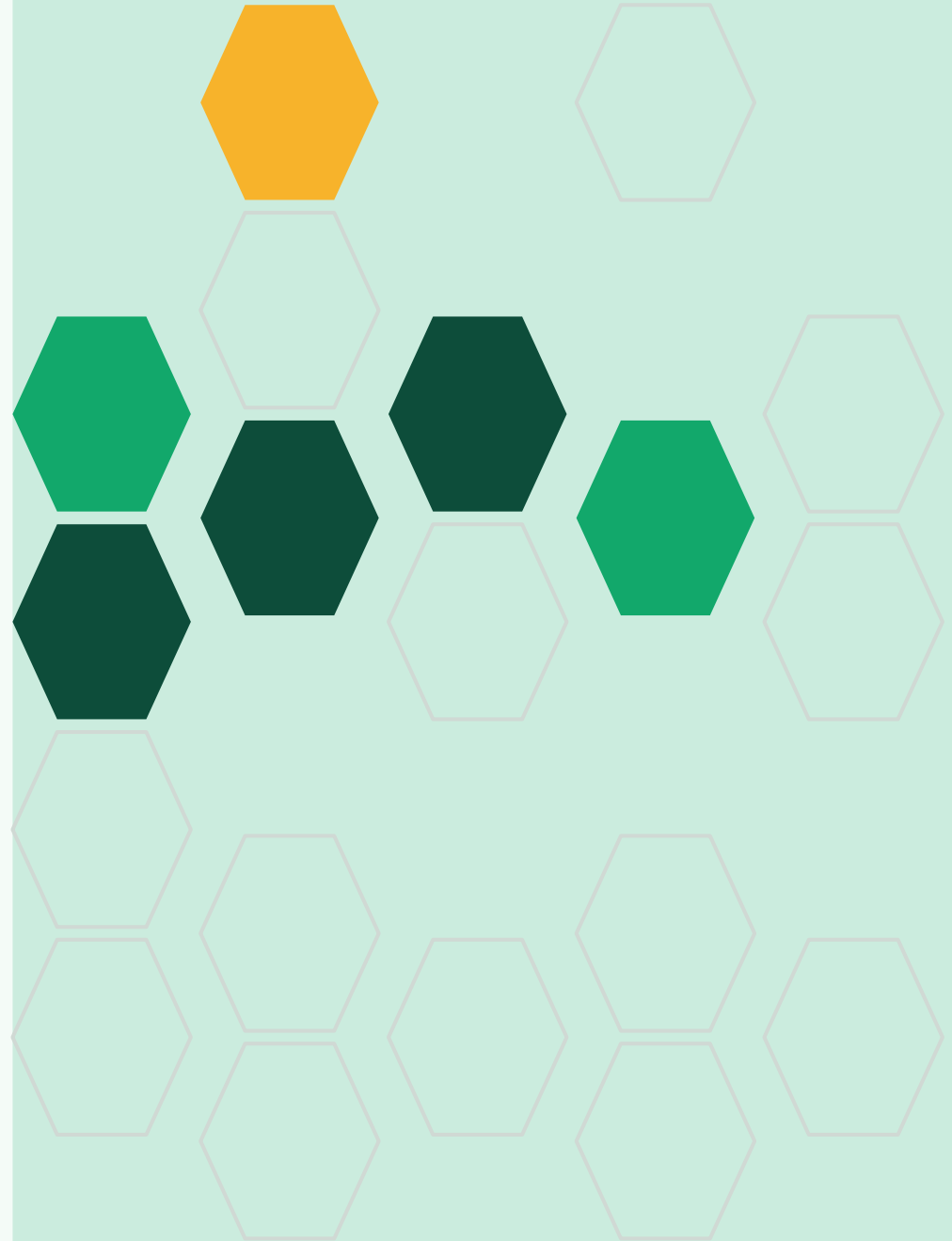
07 | Literature survey

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.

02

PROPOSED SYSTEM





09 | 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



10 | Block diagram



Block diagram / flowchart

Every module talks through one simple, testable interface.

A camera module streams frames to a local server. Faces are detected, converted to embeddings and matched to the enrolled class. Results go to a database that powers the teacher dashboard.



11 | Technology stack

1

Python

Core processing
pipeline

2

**OpenCV +
MTCNN**

Face detection

3

FaceNet

Face embeddings
and matching

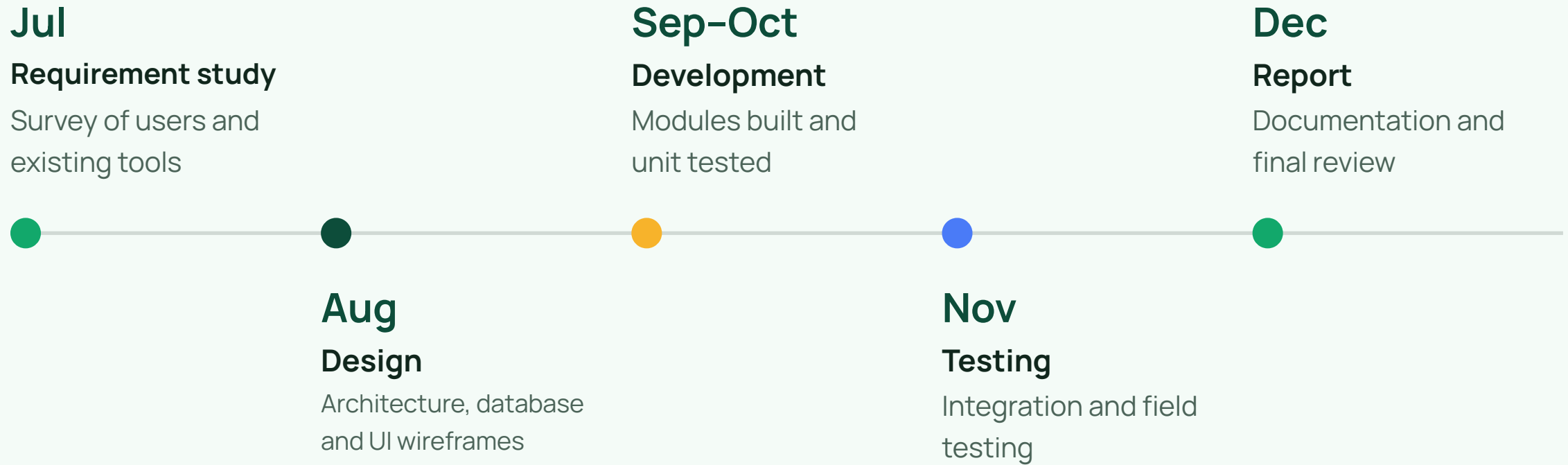
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Django

Teacher dashboard
and reports

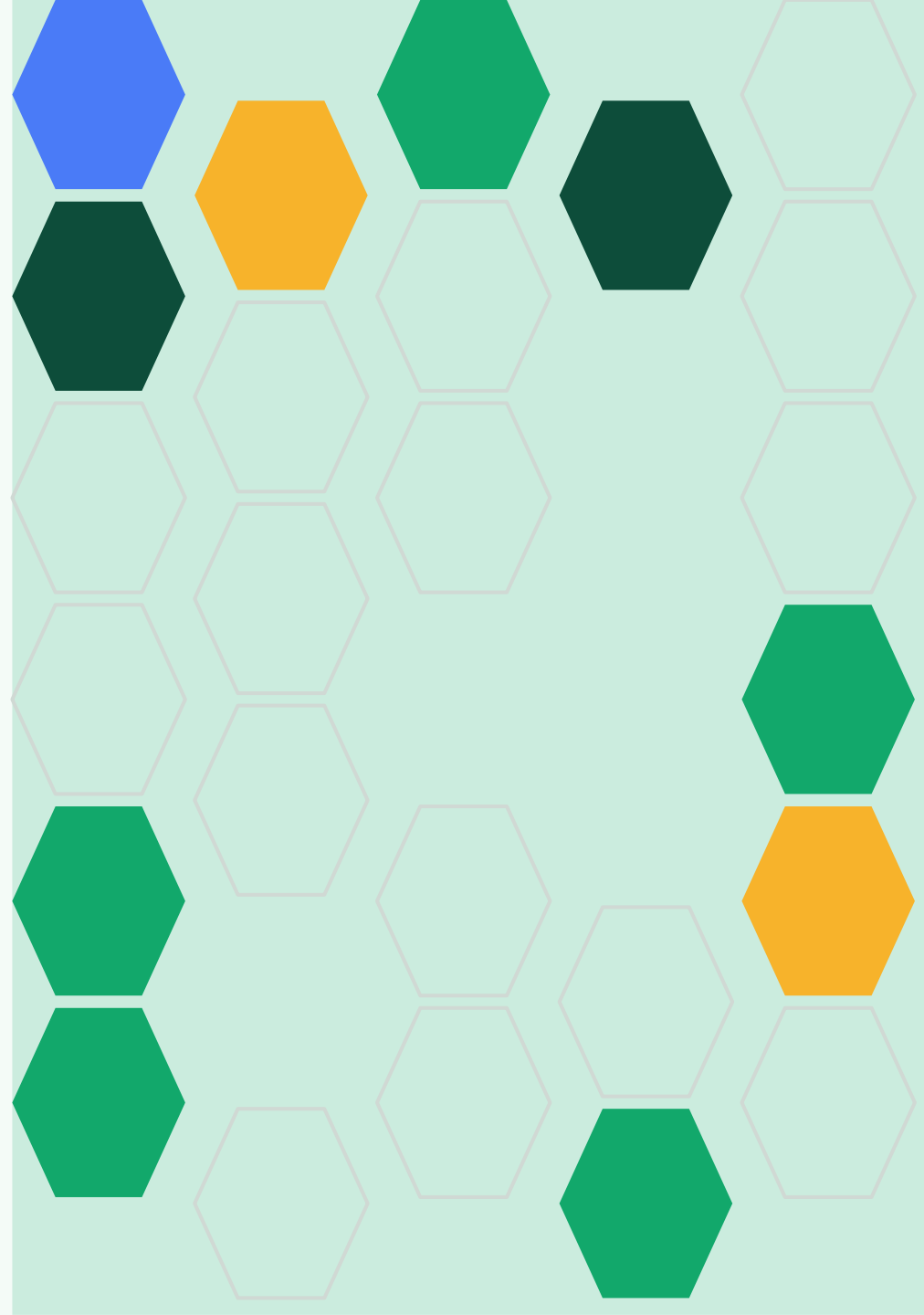


12 | Project timeline



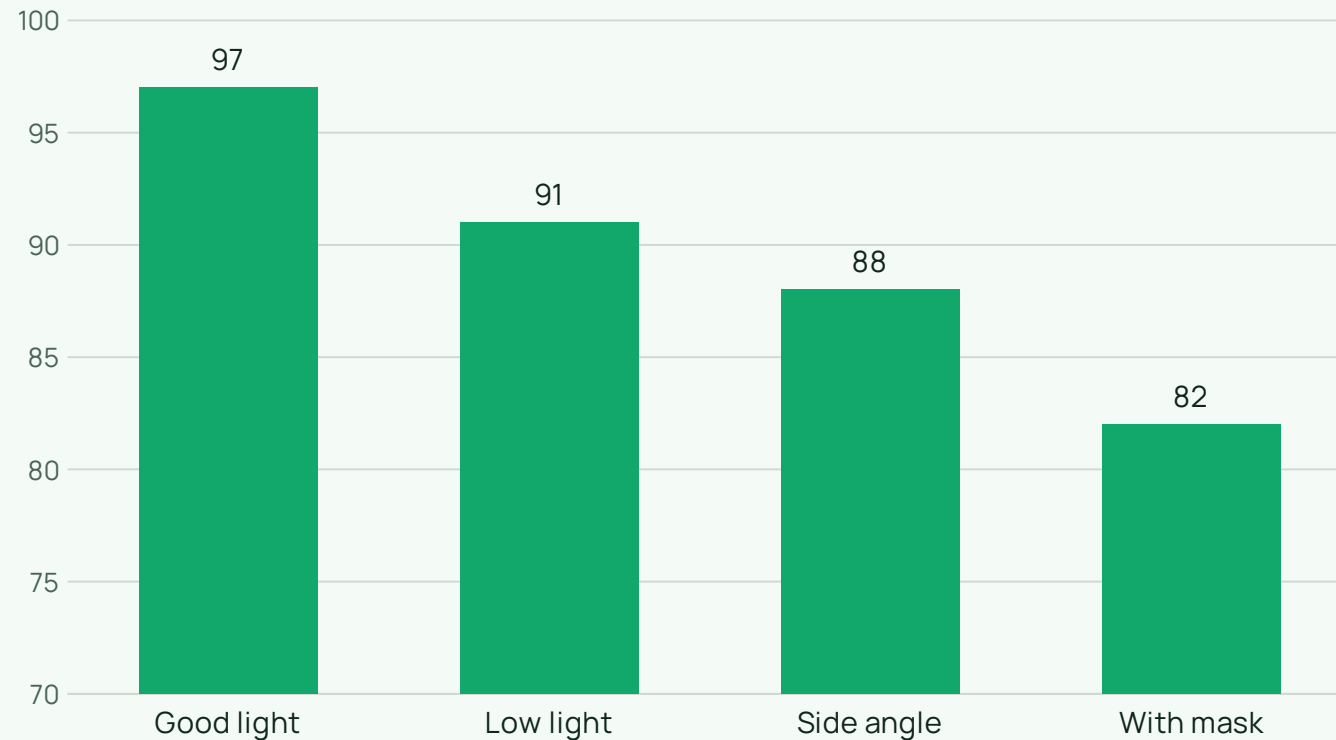
03

RESULTS





14 | 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.



15 | Key outcomes

97%

recognition accuracy

15 s

to mark a full class

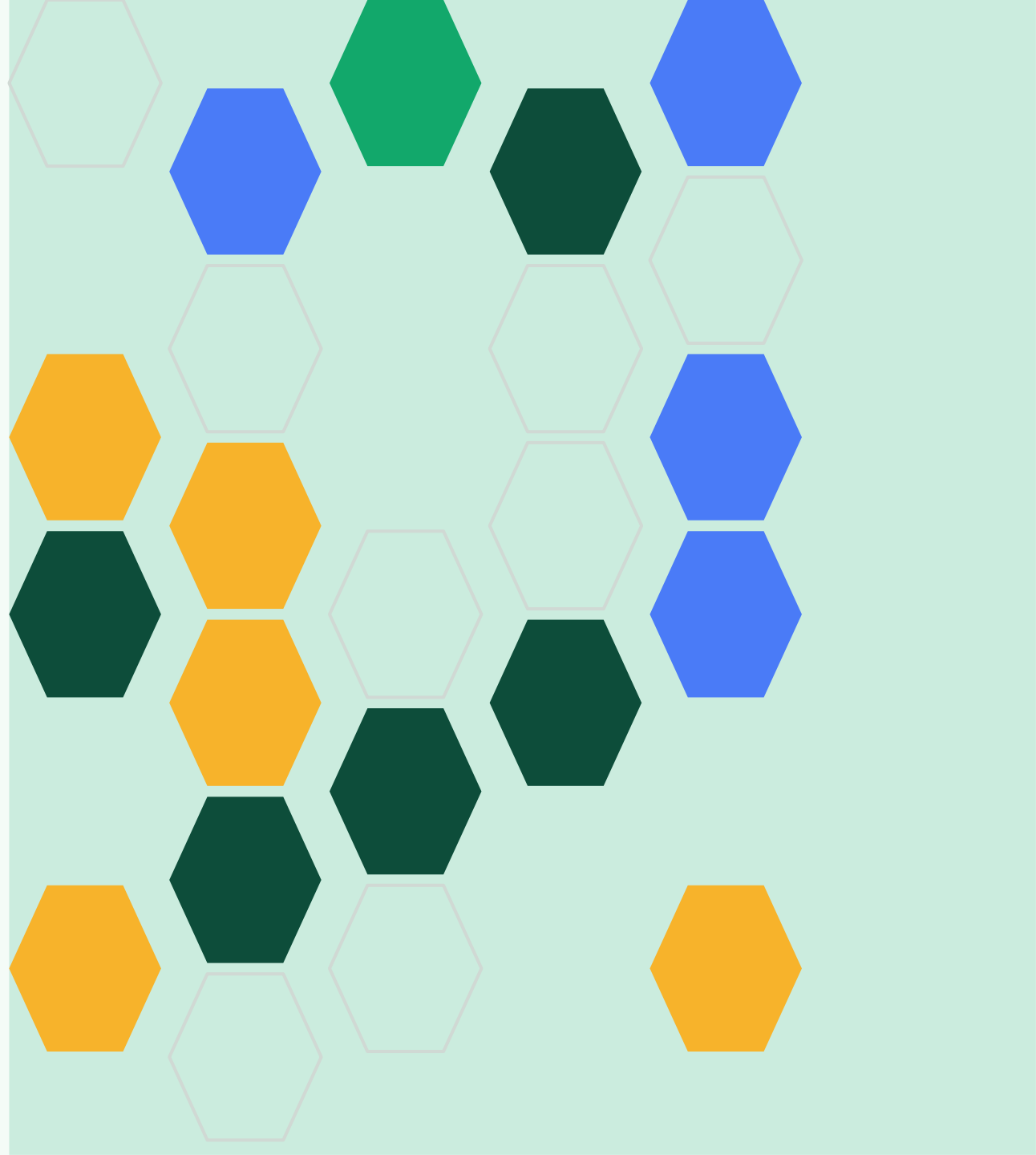
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raw photos stored

Figures from our test setup (sample data).

04

CONCLUSION





17 | Conclusion

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



18 | Future scope

1

Mobile app

Students check their own attendance

2

Edge device

Run fully on a Raspberry Pi

3

Liveness check

Stop photo-based spoofing



19 | References

- [1] A. Author, “Title of the paper,” Journal Name, vol. 12, pp. 1–10, 2023.
- [2] B. Author and C. Author, Book Title, 2nd ed. Publisher, 2022.
- [3] D. Author, “Conference paper title,” in Proc. Conference, 2024.
- [4] Official documentation of the tools used (accessed 2025).

Thank you

Questions and suggestions are welcome.

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