Gifted Education Fund: Coding, Engineering and Entrepreneurial (CE2) Skills Education for Gifted Students

# Automated Registering System through Facial Recognition

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Abstract

In this project, we aim to streamline the attendance taking process within schools and universities. This goal shall be achieved by utilising facial recognition to compare each student with an existing database.

Objective / Motivation

Traditional registering methods are manual; this is time consuming, inefficient and may also contain human errors. To tackle this issue, we have decided to create an automated registering system that uses facial recognition
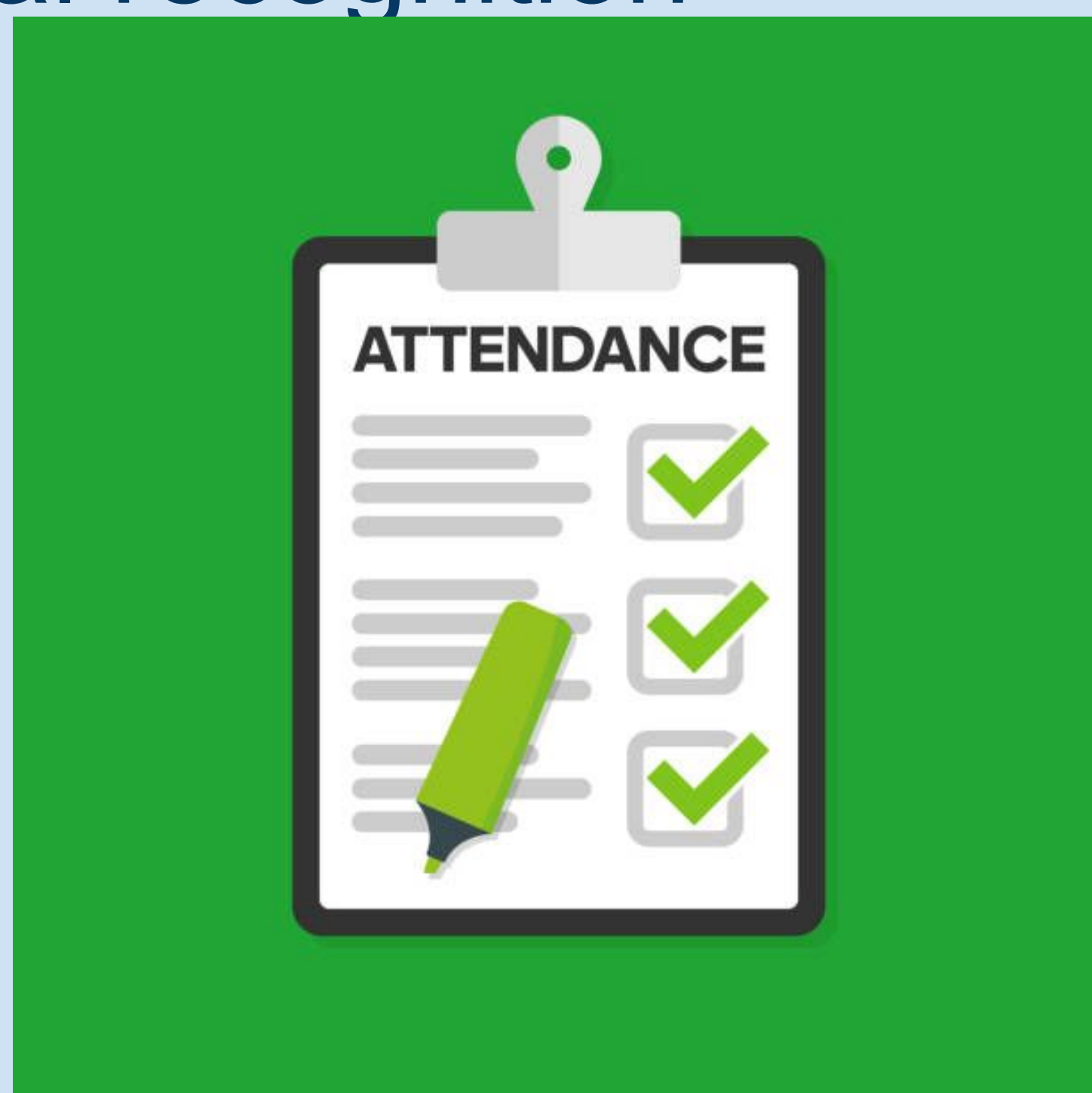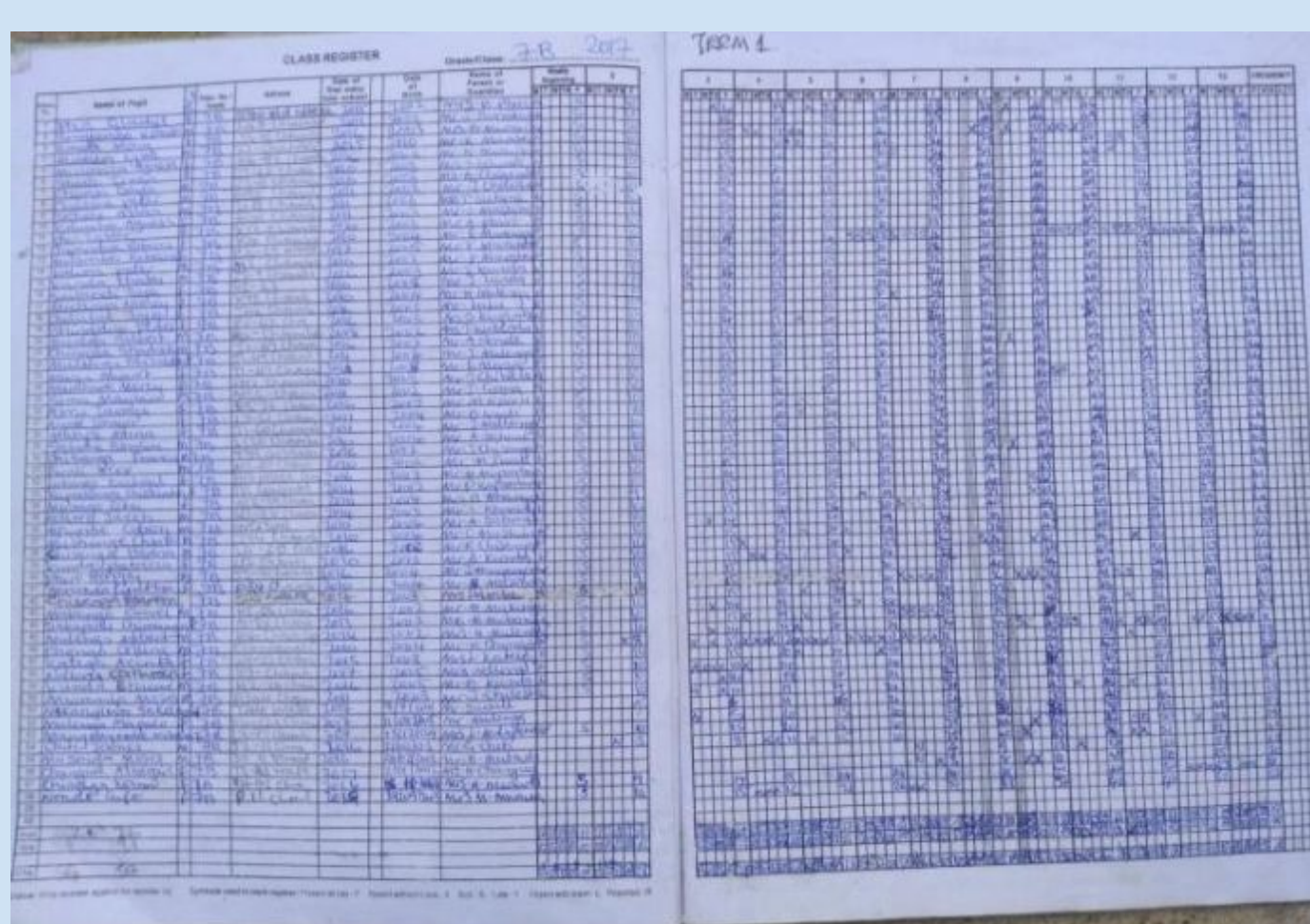

Methodology

- Place cameras at the entrance of each classroom door
- The cameras activate 5 minutes before the class starts and stay on till 5 minutes after the class starts
- Facial recognition software will be utilised to compare each student with a previously stored database and record each student who enters as 'present'
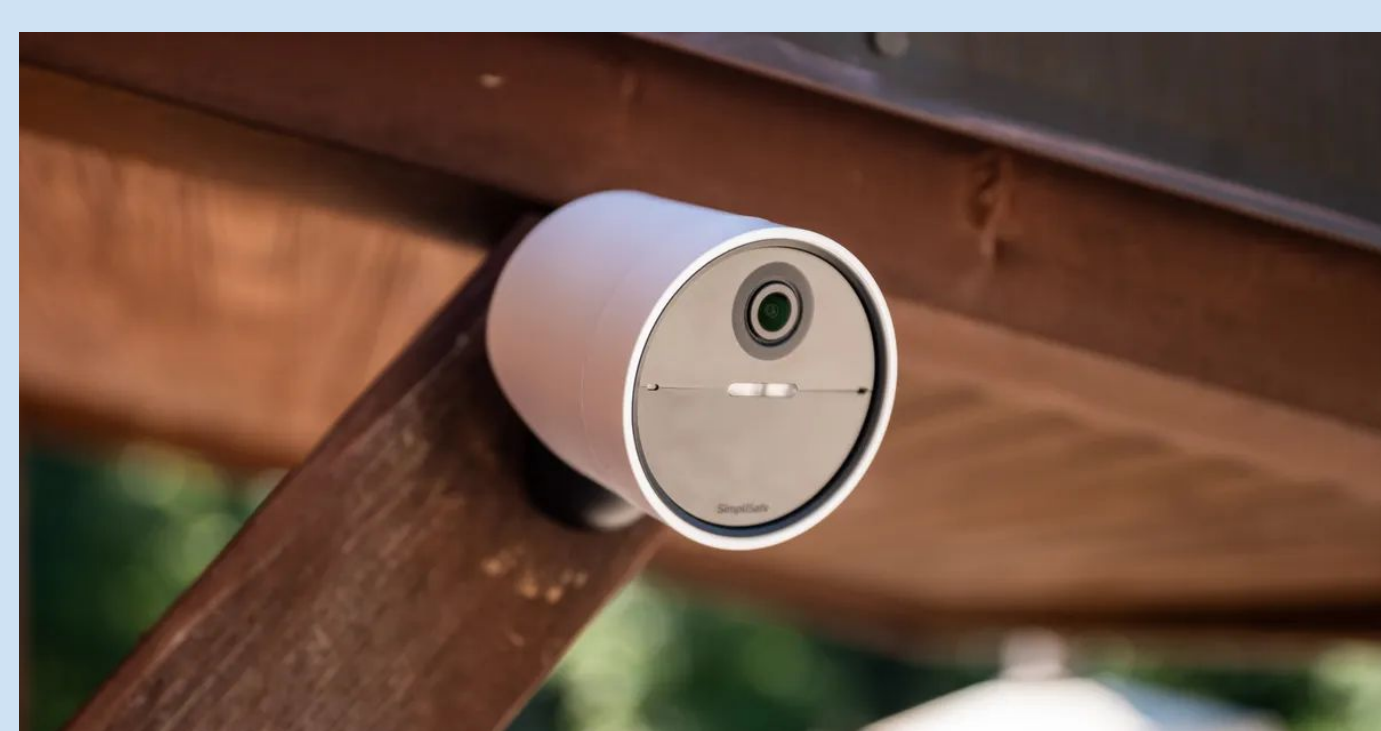
Result / Application

13/14 students were detected correctly in our class. However, it didn't work when there are too many faces in the frame. We plan to resolve this issue in further updates by leveraging semantic segmentation. Most students who were part of the training data could be identified by the AI correctly Students who were not part of the training data were shown as "unknown"
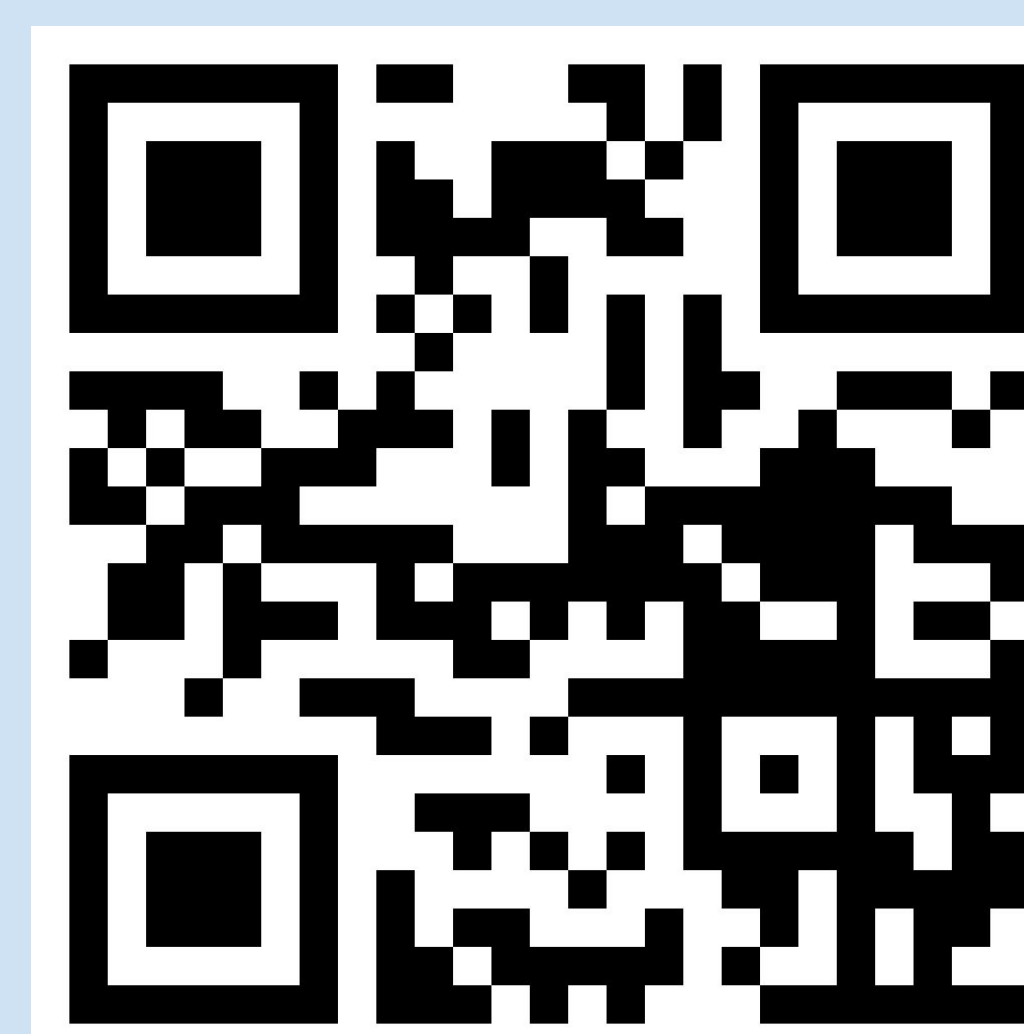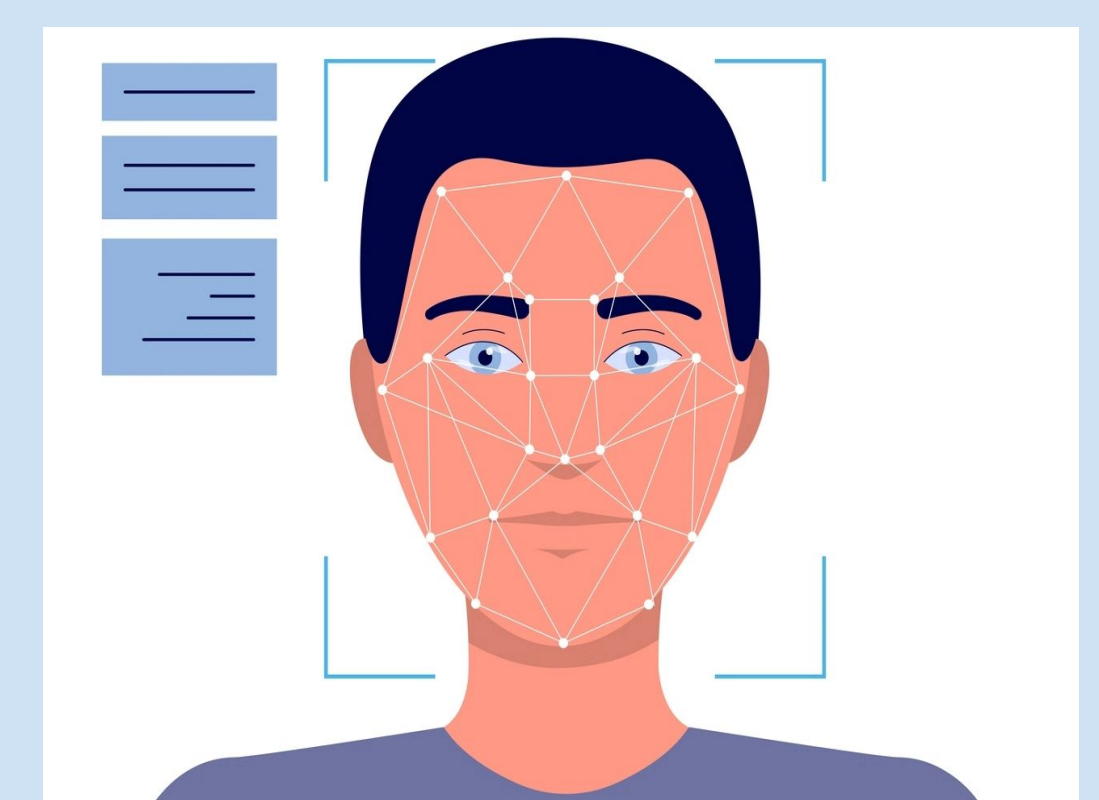
Demo Video QR code   GitHub QR code

Discussion / Conclusion

There are some concerns about our registering system that we have considered
Privacy - Schools may not agree to provide us access to students' photos
Masks - Our idea is more convenient if students no longer need to wear masks
Weird angles - Students must look at the camera