**CLASS ATTENDANCE & FACE MASK COMPLIANCE DETECTION SOFTWARE**

**Technical Specification**

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1. **Introduction**

**1.1 Abstract**

The general area covered by this project is that of machine vision, in particular facial recognition. The aim of the project is to achieve a functioning classroom attendance log using a camera and a facial recognition algorithm to identify and then log and record students who have attended the particular class. The project is also capable of noting whether a student is wearing a face mask and making note of this along with their attendance.

**1.2 Glossary**

Machine Vision - Machine learning is the study of computer algorithms that can improve automatically through experience and by the use of data.

Facial Recognition - Facial recognition system is a technology capable of matching a human face from a digital image or a video frame against a database of faces by pinpointing and measuring facial features from a given image.

Database - A database is an organized collection of data stored and accessed electronically from a computer system.

Use Case Scenario - A use case is a set of steps that are required to accomplish a specific task or goal.

GDPR guidelines - The General Data Protection Regulation 2016/679 is a regulation in EU law on data protection and privacy in the European Union and the European Economic Area.

System Architecture - A system architecture is the conceptual model that defines the structure, behaviour, and more views of a system.

High Level Design (HDL) - Explains the architecture that would be used in the development of a system. Provides an overview of the system identifying the main components of the system

**1.3 Overview/motivation**

Our motivation to undertake this particular project came about through our research of potential project ideas earlier in the academic year. While neither of us had a particular project or technology that we had our heart set on, after some research we both agreed that machine vision and facial recognition were technologies that appealed to both of us as it was something we both found interesting, we felt it would be a challenge to us, as well as the fact that it’s a relevant topic in the current technical landscape.

We found that this project had practical applications that could be used outside of academia which made the project all the more interesting to us. Many institutions and organisations can always make use of facial recognition software to take attendance in classes or meetings etc. Additionally, with the prevalent threat of COVID19 the use of machine vision could assist organisations with ensuring compliance to the face mask rules set by the government.

1. **High-level design**
2. **System Architecture**
3. **Implementation**

**(with sample code when necessary)**

1. **Problems solved**
2. **Future work**