

# Automatic Attendance System Using Face Recognition with Deep Learning Algorithm



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**Abstract** This project aims to develop an attendance system that is more efficient and convenient than traditional attendance methods currently used in schools and universities. Therefore, this paper proposes an automatic attendance system using face recognition. In this face recognition attendance system, the university does not need to install any additional devices in the classroom, which makes it a cost-effective system. The system consists of three parts: attendance system, student profile system, and training. First is the training stage where the student's photo should be captured and stored in a separate folder. Second is the attendance system. Here the lecturer needs to take a photograph of the student and then upload it to the system. The system will automatically recognize the student's face and store his/her name in an excel sheet (CVS file). The third system is the student's profile. This system is to help the lecturer retrieve the student's data by only capturing a picture of the student. A GUI has been made to simplify the usage of the system. The face recognition system has been developed using a combination of two deep learning algorithms: Multi-Task Cascaded Convolutional Neural Network (MTCNN) and FaceNet. To train the system, 908 pictures from 21 different students were collected and used, and 108 pictures were used for testing. The testing result showed 100% for face detection and 87.03% for face recognition.

**Keywords** Student's attendance · Face recognition · Deep learning · FaceNet · MTCNN

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