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Face Recognition-Based Attendance System

A dissertation by

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ABSTRACT

The Face Recognition Attendance System project intends to use facial recognition to automate the attendance process in online classes. The time-consuming and error-prone manual arrival method, which can result in inefficiencies and mistakes, is the issue this project attempts to solve. In this research, a method for detecting and identifying people based on their facial traits is suggested using Convolutional Neural Networks.

A CNN and Deep Learning model has been created to address the issue. Convolutional layers, pooling layers, and completely connected layers are among the many layers that make up this structure. The model is developed using a sizable dataset of facial photos that have been enhanced for facial features and noise reduction. The extracted faces were then classified using the CNN model, which was used to compare them to pre-registered faces in the database.

The facial recognition attendance system's test results indicated good accuracy and efficiency. The solution significantly outperformed the conventional manual arrival method in terms of time and resource usage. Overall, the experiment shows how facial recognition technology has the potential to increase the effectiveness and precision of attendance-taking systems in a range of scenarios.

Keywords: Face Recognition, Attendance System, Machine Learning, Deep Learning, Haar Cascade Algorithm, Grey Wolf Optimization Algorithm