***A Mobile-based Attendance System for Teachers and Students Using a Convolutional Neural Network : Case Study* SMKN 1 Tamanan**

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ABSTRACT

The attendance system used at SMKN 1 Tamanan has several weaknesses, including time inefficiency, the potential for fraud, and difficulties in managing and recapitulating the data. These issues arise because the school still relies on a manual method in which teachers call students one by one in each subject session, followed by homeroom teachers rechecking attendance to confirm student presence. This process is highly time-consuming and produces records that are difficult to compile and interpret by other stakeholders. To address these limitations, the study proposes a mobile-based attendance system for teachers and students using a Convolutional Neural Network (CNN) approach with the Mobilefacenet architecture for facial recognition. The system was developed using the Flutter framework, MediaPipe for face detection, and a pretrained Mobilefacenet model as a feature extractor. The attendance process consists of face detection, preprocessing, feature extraction in the form of s, and verification using the Cosine Similarity method with a predefined threshold. Testing results indicate that the system performs well, achieving a 100% success rate in Blackbox Testing, an average facial recognition accuracy of 80.88%, and a User Acceptance Test (UAT) score of 77.31%. Therefore, the developed system is able to improve the attendance process by making it easier and more efficient, and more manageable through online integration.