

## ABSTRACT

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*In the era of digitalization, the process of recording attendance has become critical, especially in academic institutions such as Telkom University that still rely on RFID and fingerprint technology. These conventional methods, although widely used, pose challenges such as the necessity of physical contact that invites queues and security risks. This research aims to overcome these limitations by developing a real-time attendance recording system that uses deep learning-based facial recognition technology. The proposed solution promises to speed up identity verification without physical contact, reduce queue time, and minimize the potential spread of disease. The system implementation integrates pre-trained models from InsightFace and Redis database to manage attendance data efficiently. The system was tested in various scenarios involving distance and lighting conditions, demonstrating its ability to recognize 'known' subjects up to 500cm away with an average response time of 0.11 seconds. The results of this research confirm that the use of a real-time facial recognition system can significantly improve efficiency, security and convenience in the attendance recording process, while supporting Telkom University in its commitment to innovation and service quality improvement. This research provides valuable insights for similar applications in other academic and professional environments.*

*Keywords: Real-Time Face Recognition, Deep Learning, Time Attendance Recording System, Redis, InsightFace*