ABSTRACT

This research implements a attendance system based on facial scan technology and artificial intelligence (AI) using the architecture of Single Shot Multibox Detector (SSD) Mobilenet V2 FPN Lite 320x320 and TensorFlow Object Detection API. The evaluation results of the system indicate a satisfactory level of object detection accuracy, reaching 89.6% for Abdul Zulfiantiko and 84.8% for Eko Prasetyo. The integration of artificial intelligence in this system significantly enhances security and accuracy in the attendance process. The SSD Mobilenet V2 FPN Lite 320x320 architecture proves to have excellent name prediction capabilities, achieving a 100% accuracy rate. Performance measurements of the model through precision, recall, and accuracy also reach maximum values, all at 100%. Variation in viewing angles emerges as a critical factor influencing object detection accuracy, with the highest accuracy observed in the frontal angle (99% for Abdul Zulfiantiko, 93% for Eko Prasetyo) and the lowest accuracy at specific angles (57% for Abdul Zulfiantiko in the lower angle, 72% for Eko Prasetyo in the right angle). This research provides significant quantitative contributions to the development of facial scan technology and artificial intelligence-based attendance systems. A profound understanding of security aspects, accuracy, and variability in viewing angles becomes a primary focus, leading to more effective and efficient implementations in the context of student or individual attendance.

Keyword**:** *Single Shot Multibox (SSD), Mobilenet, Object Detection, Ai, API.*