

ABSTRACT

On March 15th 2020, the social distancing has been established with working, learning, and praying from home. Webinar is one of the solutions so those activities still can be done face to face and conference-based. With webinar, users can interact each other in an online meeting from home. Student presence is part of a webinar. The purpose of this research is to design an accurate student presence with a face recognition system using R-CNN method. The object of this research is a human face with sufficient light, medium, and the face must be facing the camera.

This Final Task proposed for a webinar student presence system is using face recognition with Regional Convolutional Neural Network (R-CNN). With object detection and several scenarios used in this method, the webinar student presence system using R-CNN will be more accurate than the methods that have ever been used before.

This research used four scenarios to obtain the best parameters like 45 of total layers, test data of the whole dataset percentage as 10%, RMSProp as model optimizer, and 0.0001 learning rate. With those parameters, it have resulted the best system performance including 99.6% accuration, 1×10^{-4} loss, 100% precision, 99% recall, and 99.5% F1 score.

Keywords: R-CNN, Biometric, Face Recognition, Deep Learning, Neural Network