

ABSTRACT

Video game testing aims to gain user experience when trying the video game. User response or user experience in playing a video game is very important for the developer itself. There is this research user experience that will be researched targeting on emotions or expressions aimed at playing video games. Therefore, the utilization of the Convolutional Neural Network (CNN) machine learning classification for facial expression feedback in terms of play satisfaction will greatly help developers in the development and finalization of their products. Expressions that can be classified are angry, fear, sad, happy, neutral, disgusted, and surprised.

In this final task video game testing is done using Convolutional Neural Network (CNN) and The Facial Expression Recognition 2013 (FER2013) dataset. In this system, the Application of Convolutional Neural Network (CNN) is found in the extraction of characteristics, classification of images, and recommendations. Before doing classification will be done model training process first.

Testing is carried out through the following stages, namely the determination of the dataset used, the model training process, the testing process, and the performance test. Test results with a data ratio of 90% data training and 10% data validation resulted in a training model with a final accuracy value of 0.6426 or 64.26%. Furthermore, based on the results of the expression validation experiment, the system can classify expressions of anger, disgust, fear, happy, neutral, sad, and surprised. Then, real time performance testing classification with variable distance between webcam and face, respectively is 15 cm, 30 cm, 60 cm, and 120 cm and low light intensity parameters, medium, and high, obtained the best results are a test scheme with a distance of 60 cm with a moderate light intensity (14 Lux) that gets 100% accuracy to perform classification in real time, which can be concluded accuracy in real time classification is better than model accuracy.

Keywords: *Video Game Testing, Convolutional Neural Network, Expression Classification, Face Recognition.*