ABSTRACT

Cats are one of animals that can be kept by everyone. There are many cat breeds in the world, we need a system that can classify cat breeds to help cat keepers provide care according to the cat race they are keeping. The cat race classification system was previously studied using different architectures, namely the VGG16, InceptionV3, ResNet50, and Xception architectures. The results of the test accuracy in previous studies were 60.85%, 84.94%, 71.39%, and 93.75% for each architecture.

In this research, the system will be designed using a different architecture, namely using Mobilenet. In addition to other architectures, the system will be designed to classify three visually similar cat breeds. Based on this, the research in this final project will classify three classes of cat breeds, namely Birman, Siamese, and Ragdoll races using CNN with Mobilenet architecture. The stages in the design of this research system are data acquisition, pre-processing, classification using CNN, and analysis of results. Classification is carried out by training and testing processes using datasets derived from The Oxford-IIIT Pet Dataset. The results will be analyzed with the parameters of accuracy, precision, recall, and f1-score.

This research was conducted with three test scenarios, namely testing the optimizer, learning rate, and batch size. The best test is using RMSProp optimizer, learning rate is 0.001, and batch size 32. The results of accuracy test is 96.3%

Keywords: Classification, Convolutional Neural Network, MobileNet