**Abstract**

Detecting rotten apples becomes significant in the agricultural industry. Usually, the classification of fresh and rotten apples carried by humans is not effective for apple farmers. Human beings will become tired after doing the same task multiple times, but machines do not. Thus, the project proposes an approach to reduce human efforts, to reduce the cost and time for production by identifying the defects in the apple in the agricultural industry. If we do not detect those defects, those defective apples may contaminate good fruits. Hence, we proposed a model to avoid the spread of rottenness. The proposed model classifies the fresh apples and rotten apples from the input apple images. A Convolutional Neural Network (CNN) is used for extracting the features from input apple images and classifying the images into fresh and rotten apples. The performance of the proposed model is evaluated on a dataset that is downloaded from Kaggle and produces an accuracy of 98.66%. The results showed that the proposed CNN model can effectively classify fresh fruits and rotten fruits. In the proposed work, we inspected the transfer learning methods in the classification of fresh and rotten apples.