ABSTRACT

As time passed there are many advances in health were made, many technologies was created to make it easier for people to deal with health issues. One of the technology to detect blood types. Blood is the most important thing in humans classified in certain types, such as ABO and Rhesus. To required a classification to determine during blood transfusion and to detect diseases in humans. At present, however, to determine blood type, many health workers have done the conventional blood segregation by relying on human sight. Accuracy depends on the eye of the examiner, so that there can be errors in determining blood type, such as the loss of concentration that is the error in determining blood type.

This final project uses the recognition process to determine blood type in humans. The process works by seeing differences in any of the blood images examined. This process has been done using the ESP32-Cam and a tensorflow based using the method of Convolution Neural Network (CNN), exactly Faster R-CNN (Regional Convolution Neural Network) Inception V2.

The results of the Design of this device is that it can pinpoint or detect blood types in real time with an accuracy of over 70%. Datassets used each blood type by 25 pictures through the training process of 20,000 steps. In the testing process, the accuracy of each blood type image is A+ 92%, AB+ 97%, B+ 98% and O+ 95%. As for the blood group that is rhesus negative, no examination is carried out because of the difficulty of sampling.

Keyword : *Rhesus,* ESP32-Cam, tensorflow