

ABSTRACT

Blood is one of the tissues in the body in the form of a red liquid. Blood is a fluid in the body that serves as a means of transportation in the human body. Blood is classified into 4 types according to the ABO system, namely A, B, AB, and O. The purpose of this blood grouping is to facilitate blood transfusion. Currently, the process of detecting blood groups is done manually, namely by observing blood droplets that have been given anti-A serum and anti-B serum, thus requiring accuracy. When performing blood transfusions, also pay attention to the rhesus in the blood group, because rhesus is a type of protein that is found on the outside of the red blood cell surface. If there is an Rh factor or there is protein on the outside of the red blood cell surface, it is classified as Rh+, whereas if there is no protein on the outside of the red blood cell surface, it is classified as Rh-.

Based on these problems, an android-based blood type and rhesus detection application was made. By making this application, it can facilitate the detection of blood type and rhesus and is easy to use and can be used by anyone using only a cellphone. In this final project using 112 images with each blood group consisting of 28 images. The test is carried out using 10 images for each blood group using the Convolution Neural Network method based on the clotting that occurs.

In testing this application, different levels of accuracy are obtained for each type of blood group which is influenced by distance. The best level of accuracy is found in the test at a distance of 15 cm. All features in the application can function properly and this application can connect with firebase. Meanwhile, for the rhesus negative blood group, no trials were carried out due to data difficulties.

Keywords: *Blood Detection, rhesus, Image Processing, Anti-Serum.*