

ABSTRACT

Augmented Reality is a technology that can simplify human life which is applied in various fields such as barber services. Uncertainty about the choice of hairstyles by customers makes hairdressers and customers doubt. To minimize errors, the authors make an application with the name "Try-On Hairstyle", which can provide a virtual picture of various hair models that fit a variety of face shapes.

This application applies the Viola-Jones algorithm for the stage of face detection and face tracking in a markerless manner. Viola-Jones algorithm consists of 4 main stages, namely Haar-Like Feature, Integral Image, AdaBoost Machine-Learning, and Cascade Classifier. After doing face detection, the system will categorize the customer's face based on the face shape and this application will display various hair models available based on the customer's face shape with augmented reality technology.

The final result of this Final Project is "Try-On Hairstyle" application that is an android-based application that can display categories of facial shapes and hairstyles that suit the user. The data used are data from 10 women and 10 men with an age range of 20-30 years. This system is tested by black box testing, testing based on distance, testing based on light intensity, testing based on head rotation, and user acceptance testing. The result of this application is that it can detect faces and display hair models that match 100% accuracy with best distance at 30 cm-40 cm, face angle to the camera by 0°, and light with light intensity greater than 10 lux. The level of customer satisfaction in using this application is 91.7625%.

Kata Kunci: *Augmented Reality, Face Detection, Face Tracking, Viola-Jones*