

ABSTRACT

With the development of technology at this time. There are many tools or system that really help human life. Such as machine learning or machine learning which is currently helping humans, especially the elderly. There are often cases where the elderly are easy to forget something, for example forgetting people who are their family. This can be overcome with the Face Recognition application. Face Recognition is a technology from machine learning that is able to identify or recognize a person's face..

This final project offers a family member identification system application which can help the elderly to remember their family members just by pointing the External camera at the face of the person who wants to be recognized, then the system will perform the face recognition process and will display the output on the layer along with notifications to telegram. The system is built using the dlib algorithm. Dlib is a C++ toolkit containing algorithms for machine learning and software development to solve real-world problems..

This application can perform face registration and perform facial checks with registered data. Can do facial checks even though there are other variables, such as faces that use glasses, faces that use masks, etc. It can also detect faces that are directly facing the camera or tilted a few degrees. After testing the face recognition system, it was found that the system can detect a maximum of 4 faces in 1 frame. Able to perform recognition with a maximum distance of 1.8 meters from the camera. Get a detection accuracy of 100% at the angle of the face facing the camera. The system is also capable of facial recognition using glasses and a head covering, with an accuracy of 100%. And the system is able to recognize if the light lux value is greater than 0. It is hoped that this application can help the elderly to remember all their family members.

Keywords: *Face Recognition, Machine Learning, Elderly.*