

ABSTRACT

Along with the development of technology and information that currently exists, it has brought considerable changes to everyday life. One of them is digital image processing which is a way to be able to transform an image into another image with certain techniques. Face Recognition is a technology that can detect a human face. Face Recognition is a type of biometric identification system.

In this final study, a system design was carried out to be able to classify gender based on facial images in humans. The gender recognition can be done through the process of taking red, green, and blue (RGB) images which will be converted to grayscale images using the Gray Level Co-Occurrence Matrix (GLCM) method and the classification process using the Naive Bayes method which aims to distinguish male and female sexes in humans. The facial image is based on male and female classes.

The purpose of this final project is to determine gender in humans and the benefits of designing this system, one of which can be used in the health sector to detect male or female sex differences and as one of the initial technologies for advanced intelligent health applications in measuring Body Mass. Index (BMI).

The results of system testing on juvenile data types have the highest accuracy rate of 100% using an angle of 135° and a computation time of 18.05s at a size of 400×400 . The adult data type has the highest accuracy rate of 100% using an angle of 135° and a computation time of 16.37s at a resize of 300×300 . While the children's data type has an accuracy rate of 90% by using an angle of 0° and a computation time of 12.61s at a size of 500×500 .

Keywords: *Digital Image, Face Recognition, Biometrics, Face Analysis, Gender, Grayscale, Gray Level Co-Occurrence Matrix (GLCM), Naive Bayes.*