

ABSTRACT

The currency means a payment used in economic transactions in every country. Besides acting as a payment, the amount of currency in circulation have an important role in maintaining economic stability of a country to prevent inflation. One of the problems associated with the use of currency is a problem of circulation of counterfeit money.

The amount of counterfeit money in circulation requires everyone to be able to detect the authenticity of paper currency. Various methods are used to determine the authenticity of paper currency. Starting from the manual method to detection by ultraviolet light. In this Final Project, designed a system to detect the authenticity of the physical currencies using commodity scanner based on digital image texture of the paper by random technique. The feature extraction using Filter 2D Gabor Wavelet, nominal detection using template matching method and authenticity currency detected is classified by using Euclidean Distance method.

Based on the simulation as a whole, it can be concluded that the nominal detection by template matching produces an accuracy of 100%. While in the process of classification, the highest accuracy of the results obtained when using a value of $k = 3$, with an accuracy of 80%, meaning that accuracy has been as expected.

Keyword : *currency, commodity scanner, paper texture*