

## ABSTRACT

This research aims to implement ultraviolet high power light emitting diode (LED) and image recognition to produce a detection software authenticity and nominal banknotes. The output of this software is sound which explains the nominal or authenticity of money, so that it can be utilized by the blind to identify rupiah banknotes.

Research methods include competent literature studies, methods collecting banknote image data from conventional banks, and Vuforia software development kit (SDK) implementation as digital image processing. Feature image on nominal is a visual money on the front side as a whole, whereas the characteristic image for authenticity is a Bank Indonesian (BI) image resulting from lighting from lighting ultraviolet. The feature extraction method uses Natural Feature Tracking by Vuforia. Feature extraction by Vuforia produces a representative target image visual banknotes to be used as a system dataset for identifying authenticity and nominal banknotes. In addition to using the Vuforia software development kit this designation is also using the Android software development kit, so that it can run on the Android operating system.

The results obtained from this research are genuine and nominal detection software based on textit Android application, with a nominal detection success of up to 100 % with a computing time of 0.95 seconds. The performance and system computing time in detecting nominal is obtained from testing 30 front-side banknotes consisting of two thousand rupiah, five thousand rupiah, ten thousand rupiah, twenty thousand rupiah, fifty thousand rupiah and one hundred thousand rupiah each five sheet. While the success rate in detecting the authenticity of banknotes is 20 % with a computing time of 0.95 seconds obtained in the testing of 15 back side banknotes consisting of twenty thousand rupiah banknotes, fifty thousand rupiahs and one hundred thousand rupiahs each with four sheets and play money one sheet for each nominal.

Kata kunci : *Natural Feature Tracking, SDK vuforia, SDK Android, Image Target.*