

## **ABSTRACT**

*In this global era mastering another language is one of the important needs that must be owned by everyone. Many people visit other countries to do a lot of activities such as work, study and even for a holiday, one of the Japanese state. Japanese state has a different shape with the Latin alphabet in general. On the other hand, along with the development of technology one of Android as an operating system that is widely used by smartphone users. Android is open source, it allows users to add applications as needed. Therefore, it created a word translator application in Japanese hiragana to Indonesia.*

*In this project designed a word translator application in Japanese to Indonesian on the Android-based smartphone. The basic principle used in this application is Optical Character Recognition (OCR) to recognize the Japanese word captured by a smartphone camera. This study uses a Histogram of Oriented Gradients (HOG) as a method to extract each of the characteristics of each letter Japanese become inputs. Then these characteristics matched to the training data hiragana.*

*Tests conducted deliver results best parameter for applications is 82.85% with a resolution of 3264x2448 or 8 megapixel resolution for 2 to 3 syllables while the syllable is 76.67%. Tests also shows that the device processor clock speed linear effect on the system response time. Beta Testing Results on four points, namely the display application, system response time, accuracy of translation, and the benefits of the application shows the application can be classified as good.*

**Keyword:** *Optical Character Recognition, Histogram of Oriented Gradients, K-Nearest Neighbour, Android.*