

## ABSTRACT

Balinese script is one of the texts used in the Indonesian region. To read Balinese script is not easy. It is due to the difficulty to recognize the shape or pattern of syllables from the basic script. Syllable basic from the Balinese script almost has the same structure, so that in its reading will find the difficult to identify syllables basic.

The aims of study is to implementation a system that is able to recognize the texture from the Balinese Script where is using to be a basic of Balinese script. This system will using a Local Binary Pattern (LBP) technique for the characteristics extraction. One of the most important properties of LBP operator is the simplicity of calculation, has a faster computation time, and it is invariant to changes in the photometry of the same object, due to LBP is a measure of the relative intensity of a pixel by pixel intensities around. LBP is defined as the ratio of the value of the central pixel in the image with the surrounding pixel values in order to obtain a binary value in the matrix. The results of this LBP will be used as inputs in the process of image classification using Support Vector Machine (SVM) and K-Nearest Neighbor (KNN). The advantages of the method KNN is resilient against training data that has a lot of noise and effective if the data latihnya large, while the SVM classification method has several advantages, including design and can classify the relationship between variables and without the assumption of a strict, efficient, and easy interpretation. In this final project will also compare the process of classification between SVM with KNN method.

. The results of the simulation system from Balinese script recognition with highest accuracy system 74,6 %, with the average computation time for 2,3203 seconds.

**Keywords :** *Balinese Script, Local Binary Pattern (LBP), Support Vector Machine (SVM), and K-Nearest Neighbor (KNN).*