

## Abstract

The video expression recognition system has been created before using the Local Gabor Binary Pattern Three Orthogonal Planes (LGBP-TOP) extraction method and the Support Vector Machine (SVM) classification method. However, the recognizable facial expressions use the entire area of the face image, while the expression can be recognized from the change of face fiducial point on the eyes and lips only. In this study, the introduction of facial expressions was developed using LGBP-TOP and SVM methods by focusing on facial and lip images only. Therefore, an algorithm is needed to extract the eye and lip area of the face image using 3x3 blocks and 4x4 blocks, which will then be used as input on the LGBP-TOP method. After the image of the eyes and lips extracted its features, the extraction results are classified using the SVM method. The results obtained is the recognition of facial expressions using the eye and lip area get 80% accuracy and better than using the entire area of the face, eye area only, and lip area only. System performance is good based on the ROC and Precision-Recall curve.

**Keywords:** Face Expression Recognition, Local Binary Pattern, Three Orthogonal Planes, Gabor Filtering, Support Vector Machine