ABSTRACT

COMPARISON BETWEEN VIOLA JONES AND ROBERT CROSS METHODE IN THE FACE RECOGNITION SYSTEM

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Face recognition is one of biometric authenticating media which has a high accuracy level. Viola Jones and Robert Cross methods are two of the methods which have superiority in face recognition. Viola Jones method by using AdaBoost algorithm has an ability fifteen time faster than method of Rowley-Baluja-Kanade detector and sixty hundred faster than method of Schneiderman-Kanade detector. This method also has accuracy about 95% which causes it is more accurate than combination of PCA algorithm and Artificial Neural Network (ANN) which can only identify accuracy about 91.429%. *The second method is Robert Cross method by using Roberts Cross Edge detection which has a high speed level of counting. By comparing Viola Jones and Robert Cross methods, it will be known a process and a performance on speed and accuracy from both kinds of method so the best method can be use for face recognition software. After the analysis phase then known in the Big O complexity Adaboost algorithm is O(n) while the Roberts Cross Edge detection algorithm is* $O(n^2)$. *In the testing phase two method is used for testing both of that algorithm is whitebox method and blackbox method. In the whitebox testing showed that the path contained in the Adaboost algorithm is 13 and Roberts Cross Edge detection algorithm is 4. In the blackbox testing showed that Robert Cross method is more suitable in environments with bright light intensities, while Jones Viola method suitable for both environments with light intensity bright and glimmer.*

Keywords : viola jones, robert cross, face detection, face recognition.