# Face Recognition In Night Day Using Method Eigenface

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***Abstract*— The recognition of a human face is one way to discover one's identity, because the facial structure is different from every human, but with little change in the face the results will be different. With this situation less light can reduce the accuracy of the results, especially at night, where the light is so minimal that even humans difficult to distinguish facial identity.**

**For that reason then in this study will create a system that can recognize the identity of human face properly even at night. this requires image repair by using some image enhancements that can improve image quality.**

**Using the eigenface method for recognition and image enhancement to improve the image, can improve the ability to recognize up to 50% from 0% or just can not function correctly.Keywords—Face Recognition, Image enhancement**

## I. INTRODUCTION

Technology today has a very important role because it is very helpful to human performance, especially in the field of Introduction of human identity. Face Recognition is one way of identifying human beings because the face is a unique human part.

Eigen Face is one of the many methods available. Eigenface uses PCA mathematical calculations and eigenvector and eigenvalue values are obtained for comparison. In accordance with previous research [5] using LBP method, experiments will be conducted using eigenface method is more effective, because this method has high accuracy in other studies [1].

In addition, this study will perform different tests, which will perform accuracy tests conducted at night without the help of other aids such as lights for facial lighting. Without the help of a tool in recognizing someone's face then the possibility of such accuracy will be small at night. Because it will be used a process that can improve the image will be better and can improve the accuracy in recognizing the face. Then use image enhancement as a process to improve the image in order to increase the accuracy of the image. So eigenface can recognize the image that has been repaired. Where the eigenface accuracy results in recognizing the face can rise from undetectable to detected. The following is a system overview of this research.

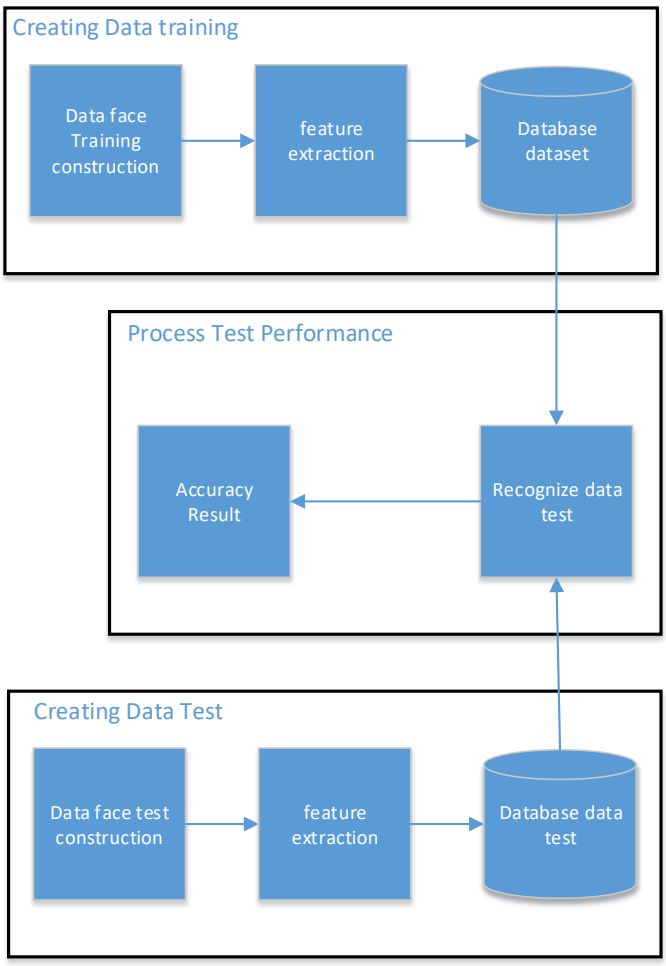


Fig. 1. System overview process

The system to be built has 3 parts, namely making the data train, create test data and system testing. The first process is to make the data train (data set) to be used as reference data to be compared with the test data in the system testing process. Preparation of training data by taking the face image of the user then taken his character by PCA method and then stored in the database. The second process is to create test data, by taking a picture of the face of the user who wants to know the identity. The third process is testing the system to determine the accuracy

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