ABSTRACT

Face recognition is one of the biometric technology that has been applied in many security system in addition to the eye retina, an iris and fingerprint recognition. Technology of face recognition is a process of human face recognition via camera (webcam) connected to a computer programming language. Calculation is performed based on the results obtained and then verified through a method. Template matching is a method that will be used. Calculation of *eigenface* value will be used as a reference of template matching. Someone's face is captured, then processed and stored in the database. The face has a matrix database which is stored and processed to obtain the value *eigenface* (*eigenface* reference).

When the testing stage, a person's face captured, processed, then matrix obtained as well as the value *eigenface* (*eigenface* testing). *eigenface* test is used to match face matrix with *eigenface* reference with minimum *eigenface* (euclidean distance). Is this the face is detected as a recognizable face (the owner) or not in the database (not the owner). Output is used to govern ATMEGA microcontroller 16 to start the motorcycle.

From the experiment and the test performed, the tool can identify the facial image with the level of success up to 82% . This proves the tool is good enough in the face recognition.

Keywords: Face Recognition, Template Matching, Matrix, EigenFace, Database, Microcontroller atmega16.