ABSTRACT

Face recognition using the Sparse Representation based Classification (SRC) method has developed rapidly since 2006, which is supported by several advantages of the SRC method. The SRC method can solve occlusion, lighting, and pose variations. SRC has the disadvantage of a heavy computational load, which can be overcome by reducing the image dimensions. In the SRC method, there is a process of changing a two-dimensional matrix be a one-dimensional vector. In this final project, converting a two-dimensional matrix into a one-dimensional matrix will be carried out through three scanning techniques, namely scanning technique column to row (column to row), row to column (row to column) and zigzag. The data used is AT&T which consists of 400 face images, with each image having 10 different pose variations. Testing downscale produces the same value for each scanning technique used, the highest accuracy 94.5 % at $\rho = 256$, while the result from the Random Gaussian test, the highest accuracy obtained is 83 % at $\rho = 128$ using row to column scanning technique. The computation time using a zigzag scanning technique, the results obtained are 0.12 seconds, faster than the column to row scanning technique and row to column.

Keywords: Face Recognition, Scanning Technique, Sparse Representation based Classification, AT&T Database