Abstract

Learning in artificial neural networks will involve a lot of computation process, especially on the use of differential evolution (DE). This might impact the usage of memory will be a lot when the process of computing. In general, the process of computing that uses single-precision floating point format (32 bits) or double precision (64 bits) to represent real numbers. In single precision can reach out to 38 decimal places, it can be categorized usage great precision. Many research that has been done to create a computer system with fast and accurate computational capabilities. One of those is to reduce the precision operand without changing the method to the extent that the quality of computation results can be received. In this research, the reduction conducted of the operand precision floating point format to fixed point on the simulated individuals through iris recognition. The focus in this research is the effect of the reduction of precision in the differential evolution algorithm which is applied to the ANN. The last result of the individual recognition through iris recognition using limited precision compared with results without using limited precision to see which precision is having precision accuracy approaching or even exceeding the results using limited precision. The results of this research are precision fixed point with the number of bits is 11 can do the training and individual recognition through iris with an average accuracy above 85%.