Abstract

Recognizing *stroke* disease early is useful for society remember stroke's damage is fatal, can handcuff the patient during years as a handicap even causing death. Usually, for diagnosing stroke disease a doctor must know the symptom and disease history owned by someone. This matter can be assisted by developing system which can diagnose stroke disease based on someone's *stroke risk factor* (laboratory result) with the knowledge learned from case that happened before.

The system developed by combining *genetic algorithm* with artificial neural network, especially for optimizing artificial neural network's weight. The technique of ANN learning that used in this system is *feed forward neural network ANN*, 9 input in input layer adapted by the amount of stroke risk factor, 3 neuron in hidden layer and 1 output in output layer, representing classification wheter someone is stroke or not, accuracy of JST result measured by SSE value.

The experiment of diagnosing stroke disease have been done and the result is compared to *backpropagation ANN*. Best result using *GANN* reach accuration level 100% at examination of data testing while backpropagation ANN only reach 96.67% . From the experiment conclude that optimized artifical neural network's weight with genetic algortihm give better result than backpropagation ANN.

Keywords: *Stroke, Stroke risk factor, Genetic algorithm, GANN, Feed forward neural network ANN, Backpropagation.*