Abstract

Rain is a natural phenomenon that in the appropriate amount can be very useful to human life. But the rain is a natural phenomenon that can not be regulated or scheduled. That condistion is difficult for those who depend on rain for its activities for example farmers during cultivation period.

In this research the author tried using Multilayer Perceptron algorithms to predict the rainfall in a particular region and time assisted by Genetic Algorithm (GA) and Particle Swarm Optimization (PSO) to optimize architecture and weights used in the MLP . Multilayer Perceptron is algorithm that can produce a pattern / model of the existing data and genetic algorithm is used to find the best network architecture that will be used in the MLP and the Particle Swarm Optimization algorithm used for the training process to fin the best weights of the MLP architecture. At first, the data is divided into two parts: training data and testing data. Training data are used to generate a data model in the system and testing data are used to determine whether the model created before was good or not. MLP algorithm is expected to produce an accurate model due to its ability to learn and with the help GA and PSO that have the ability to find solutions in the problems that have large solution. It can be used to optimize the network architectural and MLP weights to be used in the prediction process so the result can be optimized. The data used in this algorithm is the rainfall data of 2003-2013 in Pemalang, Central Java .

Key Words: prediction, MLP, rainfall data, *particle swarm optimization, genetic algorithm*