

ABSTRACT

Forecasting is the process of systematically predict anything based on the state of the previous state. Forecasting can be done through a series of scientific method. Soft Computing (SC) is one of the scientific method that can be used for forecasting or prediction case, Soft Computing (SC) has a basic algorithm that is Fuzzy System, Artificial Neural Network (ANN), and Evolutionary Algorithms (EAs). In this final project research based on weather forecasting rainfall in Bandung using one of the basic algorithm of Soft Computing (SC) is Evolutionary Strategies (ES) which is based on Evolutionary Algorithms (EAs). The data used is the rainfall data of Bandung regency during the last 10 years (2005-2015). Furthermore, to the process of Evolutionary Algorithms (EAs) starting from a set of candidate solutions (people) called the population, one individual stated one solution. The initial population will evolve into a new population through a series of generations (iterations), at the end of the generation of EAs restore the individual members of the population that is best as a solution to the problems encountered. On the representation of individuals, EAs have four algorithms that can be used, one of which is Evolutionary Strategies (ES), which will also be used in this study. From exsperiment result of rainfall forecasting using Evolution Strategies, obtained the best MAPE with parameter mutation probability (Pm) or sigma that valued 0.5 given as the result of rainfall prediction with MAPE 1.419% or have the result 98.581% accurate.

Keywords: Forecasting, weather, precipitation, Evolutionary Algorithms (EAs), Evolutionary Strategies (ES).