

ABSTRACT

The increasing number of dengue fever patients becomes the main problem that can not be solved by the government and related parties. The way to overcome it is considered less effective and efficient because every year the number of dengue fever patients is still increasing, especially in the city of Bandung so it requires an application capable of predicting the spread of dengue outbreaks. The application was built using genetic algorithm method to find out the pattern of disease spread in Bandung and correlation of temperature variables, rainfall, population density, place height, male sex distribution, and distribution of education level to the spread of dengue fever. The most influential variable search scenarios were performed with a combination of different genetic algorithm parameters which showed the most influencing variables on the spread of dengue in Bandung were temperature, place height, male gender distribution, and educational distribution. Levels obtained from third testing scenario with Probability of crossover 0.9, mutation probabilities 0.1, 200 populations and 1000 generations. The pattern of the spread of dengue fever in Bandung from 2010 to 2014 resulted in 0% of the city of Bandung free from the spread of dengue fever, 42% of Bandung area vulnerable to the spread of dengue fever, 56.66% Regional alert Bandung spread of dengue fever, 2% of Bandung danger of dengue fever and 0% dengue disease endemic city of Bandung.

Keyword: artificial intelligence, Genetic algorithm, dengue fever.