

# **Prediksi Penyebaran Penyakit Demam Berdarah Dengue (DBD) menggunakan *Artificial Neural Network* dengan Metode *Backpropagation* dan *Geographic Information System* (GIS)**

**Pandu Wiguna Putra<sup>1</sup>, Fhira Nhita<sup>2</sup>, Annisa Aditsania<sup>3</sup>**

<sup>1,2,3</sup>Fakultas Informatika, Universitas Telkom, Bandung

<sup>1</sup>panduwiguna@students.telkomuniversity.ac.id, <sup>2</sup>fhiranhita@telkomuniversity.ac.id,

<sup>3</sup>annisaaditsania@telkomuniversity.ac.id

---

## **Abstract**

Dengue hemorrhagic fever is a disease with high mortality and morbidity in Indonesia. Dengue hemorrhagic fever (DHF) is a public health problem that develops in subtropical countries. In Southeast Asia, with a total population of 1.5 billion, around 1.3 billion people are at risk of getting DHF. Determinants of dengue hemorrhagic fever (DHF) infections, including rainfall, climate (temperature, humidity, etc.), virus density, and herd immunity. That way it is necessary to predict the spread of Dengue Hemorrhagic Fever (DHF). In this study, the prediction of spread using the Backpropagation Neural Network algorithm, then the results of the prediction will be visualized using GIS to find out the prediction model and to determine the spread of Dengue Hemorrhagic Fever (DHF). Using the ANN Backpropagation method produces RMSE 0.197997, with 20 neurons / hidden layer, learning rate 0.3 and iteration 50.

**Keywords:** DHF, Backpropagation Neural Network, GIS, Climate.