ABSTRACT

Telkom University Landmark Tower (TULT) is an impressive 19-storey building, with different heights on each floor, which poses challenges in predicting temperature and humidity due to variations at different heights. To overcome this, this research introduces a solution using the Generalized Additive Model (GAM) and Internet of Things (IoT) methods to accurately predict temperature and humidity levels at different altitudes in TULT. The authors developed a flexible system that combines GAM and IoT algorithms to predict light, humidity and temperature, enabling precise estimation at various altitudes. The experiment was carried out using Mean Absolute Error (MAE) and Mean Bias Error (MBE) measurements for data testing and data training. The results show the effectiveness of this approach, with temperature measurements producing a low MAE value of 1.7869 and a negligible MBE value of 0.0506 for the training data. Likewise, humidity measurements show an MAE value of 13.3275 and an MBE value of 0.1837 for data training, which further demonstrates the accuracy and maintenance model proposed.

Keywords: Generalized Additive Model, Internet of Things, Prediction