

## ABSTRACT

### **Predicting Rice Crop Yield Production Through Climate Data using Neural Network**

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Rice is one of the primary agricultural resources in Indonesia. The highest rice production is in East Java. By nature of yearly rice yield data, only a limited quantity of the dataset could be acquired. Furthermore, there is only a limited study that uses weather data, especially precipitation and temperature, are essential in rice crop. There is yet to be a rice yield prediction using weather data in East Java Indonesia, with last year yield production and most of the past researcher in Indonesia using regression methods and not using a neural network

Predicting the rice yield of Indonesia's East Java province from 1971 to 2018, with climate conditions that are precipitation and average temperature per month, and last year rice yield production as predictors was researched using Multi-layer Perceptron (MLP) and Linear Regression (LR) models.

In the evaluation, last year yield emerged as a dominant predictor that affect Multilayer Perceptron model evaluation percentage error reduction in 90.22% in Mean Squared Error (MSE) evaluation and 68.77% Root Mean Squared Error (RMSE) than not using last year yield data. The result shows that Multi-layer Perceptron (MLP) model performance is better than Linear Regression model.

*Keywords: Rice crop yield, Multi-layer Perceptron, Neural network*