ABSTRACT

Weather is the condition in an area that changes over a certain period of time or is relatively very short and has a very important role so that it can affect the pattern of people's lives, individuals, agencies, and companies. Irregular rain patterns result in hydrometeorological disasters such as floods and landslides. Therefore, residents really need accurate information to predict and anticipate high rainfall which has the potential to cause flooding. The aim of this research is to create a system that can predict rainfall. The limitation of this research is to use datasets from the Pusat Riset Iklim Atmosfer (PRIMA), Badan Riset dan Inovasi Nasional (BRIN) from 2020 to 2021.

In this research, what is done is to create a machine learning (ML) model using two methods, namely random forest and artificial neural network (ANN) to predict rainfall. The data used are five features, namely timestamp, temperature, total rainfall, relative humidity, and average radiation. Furthermore, the data is divided into training data and test data using k-fold cross-validation with a ratio value of 67:33. While the evaluation of the model uses a confusion matrix.

In this study, the authors will compare the accuracy results of the random forest algorithm and ANN. The results of the analysis show that the random forest algorithm has an average accuracy value of 98.20%. The accuracy value obtained by the random forest algorithm has a better value when compared to the ANN algorithm which has an average accuracy value of 96.83%.

Kata Kunci: *Artificial Neural Network, Machine Learning, Rainfall, Random Forest*.