

## **ABSTRACT**

### **CLASSIFICATION OF DDOS ATTACKS WITH TCP/UDP PROTOCOL USING MACHINE LEARNING**

Oleh

Dhafin Dhihas Pambudi

NIM 20102287

*This significant increase shows society's positive trend in adopting digital technology. This development has a major impact on people's daily lives and shows the increasingly important role of the internet in the social and economic progress of countries [1]. However, keep in mind that the increasing development of internet connections also raises security problems. DDoS attacks, also known as Distributed Denial of Service, are one emerging threat. Therefore, while we acknowledge the rapid rise of the internet, it is important to continue improving internet security to protect digital infrastructure from DDoS attacks. With this research, the aim is to be able to process the dataset so that it can be classified by random forest and KNN. Knowing the accuracy, recall, precision, and f-1 score of the Random Forest and KNN models respectively in classifying DDoS attacks by looking at the level of accuracy obtained. The method used in this research uses a flow diagram using the Knowledge Discovery in Databases (KDD) method, balancing the data using undersampling, and evaluating the model using a confusion matrix. The results obtained from Random Forest and KNN are 1.0 for Accuracy, Recall, Precision, and F-1 Score.*

**Keywords: DDoS, Detection, K-Nearest Neighbor, Machine Learning, Random Forest.**