ABSTRACT

Admitted batch: 2020 **Academic year:** 2023-24

Batch ID: A17 **Date:** 01-02-2024

Domain: Cyber Security

Title of the project: Network Intrusion Detection System

Abstract:

This project addresses the pressing need for robust network security through the development of a Network Intrusion Detection System (NIDS) that seamlessly integrates network security principles with advanced machine learning techniques. Existing methods often fall short in adapting to dynamic threat landscapes. This project overcomes these limitations by employing a robust dataset, extracting pertinent features, and utilizing machine learning models. The chosen model is trained to recognize patterns in network traffic data, distinguishing between normal and malicious activities. Evaluation metrics validate the model's efficacy in real-world scenarios. Utilizing a diverse dataset and feature extraction, the project employs machine learning models to recognize patterns in network traffic data, effectively distinguishing between normal and malicious activities. The NIDS, when integrated into a real-time monitoring system, analyzes incoming traffic, triggering alerts upon detecting suspicious activities. Continuous model improvement ensures adaptability to evolving threats. The deployment and testing phases validate the system's effectiveness, positioning it as a comprehensive solution to bridge the gap between traditional security measures and cutting-edge machine learning in the dynamic landscape of cybersecurity.

Keywords:

1. Network Intrusion Detection System (NIDS)
2. Machine Learning
3. Network Security
4. Threat Detection
5. Real-time Monitoring
6. Cybersecurity
7. Data Preprocessing
8. Alerting Mechanism
9. Continuous Improvement
10. Model Evaluation

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