



SIDDARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY (AUTONOMOUS)

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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BATCH

NO: 9

PROGRAMME: CSE(AI&ML)

PROJECT TITLE:

DETECTING AND MITIGATING BOTNET ATTACKS IN SOFTWARE DEFINED

NETWORKS USING DEEP LEARNING TECHNIQUES

Abstract:

The increasing rate of Botnet attacks poses a significant challenges to SDN security. The centralized control architecture of SDN, while offering flexibility , which vulnerable to malicious activites such as DDoS attacks, malware activites, data theft which are launched by botnets. In traditional SDN architectures, the existing system rely on signature-based or rule-based methods, often struggles to efficiently manage network traffic and detect emerging security threats.To address these challenges, this project proposes a deep learning-based detection and mitigation framework to identify botnet attacks in SDNs with high accuracy and real-time responsiveness.The proposed system leverages SDNs centralized architecture to gather comprehensive flow data and uses advanced deep learning models such as convolutional neural network, LSTM, deep hybrid techniques to accurately identify malicious patterns. Once detected, the system automatically applies mitigation strategies to block or isolate compromised nodes. The proposed system approach enhances early detection, improves response efficiency, and strengthens overall network security.

KeyWords: Botnet Attacks , Deep Learning, Software-Defined Networking, DDoS attacks , Malware activites, Convolutional Neural Network, LSTM.

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