**DDoS Detection Using Artificial Neural Network Regarding Variation of Training Function**

DDoS dataset from CAIDA and Ahmad Dahlan University Networks Laboratory in .pcap format

six features: Average packet size; Number of packets; Time interval variance; Packet size variance; Packet rate; Number of bytes

Algorithm: Quasi-Newton method, Resilllent-Propagation training function, Scaled-Conjugate training function

Train: 200 data, 70% train, 15% validation, 15% test

Accuracy: 99.2% to 98.8%

**DDoS Attack Detection based on Chaos Theory and Artificial Neural Network**

Based on chaos theory

Accuracy: 95%

**Detection and Analysis Of Ddos Attacks Using Machine Learning Techniques: A Literature Review**

DDoS type: UDP Flood Attack, ICMP(Ping) Flood, Smurf Attack, Ping of Death (PoD), HTTP Flood Attack, SIDDoS Attacks

Techniques: Naïve Bayes, Support Vector Machine, Decision Trees, Artificial Neural Network, K-Mean Clustering, Fuzzy Logic, Genetic Algorithms

**Machine Learning DDoS Detection for Consumer Internet of Things Devices**

Steps: Traffic Capture, Grouping of Packets by Device and Time, Feature Extraction, Binary Classification

Algorithm: K-nearest neighbors “KDTree” algorithm (KN), Support vector machine with linear kernel (LSVM), Decision tree using Gini impurity scores (DT), Random Forest using Gini impurity scores (RF), Neural Network (NN)

Test: IoT environment, a TCP SYN flood, a UDP flood, and a HTTP GET flood, 491k packets

Accuracy: 0.91 to 0.99

**DDOS DETECTION AND MITIGATION USING MACHINE LEARNING**

Analysis at router

Training dataset come from their simulation

Clustering using k-means++ algorithm

Accuracy not mentioned

**A Deep Learning Based DDoS Detection System in Software-Defined Networking (SDN)**

Traffic Collector and Flow Installer

Feature Extractor (FE) and Traffic Classifier

Train: 90k records, TCP, UDP, ICMP

Test environment:

Accuracy: 99.82%

**Detection of Distributed Denial of Service Attacks Using Artificial Neural Networks**

Analyzing the header information of retrieved packets of the networks using trained artificial neural networks.

Install DDoS detectors, analysis package and gen output for different actions

Accuracy: 92% to 97%

**Detection of DDOS Attacks in Network Traffic Using Deep Learning**

NSL-KDD data set

Deep Learning

Accuracy: 0.988

**Detecting Distributed Denial of Service Attacks Using Data Mining Techniques**

A new dataset was collected in this work because there is no existing data sets that contain a modern DDoS attack

four types of DDoS attack as follows: (HTTP Flood, SIDDOS, UDP Flood, and Smurf)

250k records

Algorithms: ML, Random Forest, Naïve Bayes

Accuracy: varies by attack type, overall accuracy was 98.63%, 98.02% and 96.91% for MLP, Random Forest and Naïve Bayes

**A deep learning based intelligent framework to mitigate DDoS attack in fog environment**

Algorithm: Long Short Term Memory

Hogzilla Dataset

Record accuracy for different training parameters, highest 98.88%