

MS BITHI

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Profile Summary

Passionate and detail-oriented Computer Science graduate with published research in cybersecurity and hands-on experience in Federated Learning, deep learning, and anomaly detection. Seeking to contribute to AI-driven cybersecurity research.

Education

Prime University , Dhaka, Bangladesh

Bachelor of Science in Computer Science and Engineering

- CGPA: 3.83/4.00
- Graduation Date: 18th May 2024

Research Projects

IEEE-Published Thesis:

“Enhanced DDoS Detection in Software Defined Networking Using Ensemble-Based Machine Learning”

- Published in IEEE 6th International Conference.
- Designed an ensemble ML-based intrusion detection system tailored for SDN.

Federated Learning for Drone Anomaly Detection

- Implemented a complete federated learning pipeline using RNN/LSTM/ANN for binary and multiclass classification.
- Simulated IID and non-IID clients, added differential privacy and tested multiple aggregation methods(FedAvg, ClusterAvg, Krum, Fedprox, FedAdam, Fedmedian).
- Achieved high accuracy and robustness across heterogeneous clients, even under adversarial and imbalanced conditions.

Technical Skills & Soft Skills

Technical Skills :

- Programming: Python, C#, JavaScript, SQL
- ML/DL: scikit-learn, TensorFlow, pandas, NumPy, SMOTE, Feature Selection
- Federated Learning & Privacy: TensorFlow Federated, TensorFlow Privacy, FedAvg, Krum, ClusterAvg
- Web Development: ASP.NET Core, HTML/CSS, Bootstrap
- Tools: Git, Jupyter, Google Colab, VS Code, Visual Studio,Kaggle

Soft Skills :

- Problem Solving and Logical Thinking
- Team Collaboration and Communication
- Research and Analytical Skills

Experience

Trainee .NET Developer

Save the Children

- Joined as a trainee in September 2024.

Achievements

- **Champion** Poster Presentation – CSE Fest 2024
- (DDoS Attack Detection using Feature Selection & ML)
- Thesis Presentation Excellence – Recognized for technical depth and clarity
- **HackerRank** SQL Badge – Solved all SQL challenges
- Merit Scholarships – From 7th semester onward

Personal Projects

- MNIST Handwritten Digit Classification using ANN
- Customer Churn Prediction using ANN
- DDoS Attack Detection for SDN Using Ensemble-based Algorithm
- IoT Attack Detection using TensorFlow and TensorFlow Federated
- NSL-KDD Intrusion Detection using Classical ML (SVM, Random Forest, etc.)
- Drone Anomaly Dataset Preprocessing & Client Partitioning (SMOTE + Stratified Splitting)

Leadership & Extracurriculars

- General Secretary & Treasurer, Prime University Computer Club (2022–2024)
- Organized tech seminars, fests, coding workshops
- Campus Ambassador, GUVI (India, 2022–2023)
- Volunteer, Blood Donation Club & National Event Organizing Committee

Research Interests

- Cybersecurity & Adversarial ML
- Federated & Distributed Learning
- Model Robustness and Privacy
- Network Intrusion & Anomaly Detection

Language Proficiency

English: Preparing for IELTS Certification

Expected Overall Band: 7.0

Reference

Available upon request