MD OLID HASAN BHUIYAN

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Google Scholar ◇ GitHub ◇ LinkedIn

EDUCATION

University of California, Riverside, CA, USA *June 2029 (expected)*
Ph.D. in Computer Science GPA: 3.71/4.0 Advisor: Dr. Emiliano De Cristofaro
Currently working: Privacy Auditing in Vertical Federated Learning, Privacy and utility of Synthetic data generator

Bangladesh University of Engineering and Technology, Bangladesh *May 2023*
B.Sc. in Computer Science and Engineering GPA: 3.69/4.0
Related courses: Computer Security, Computer Networks, Operating System, Machine Learning, Data Structure and Algorithms, Computer Graphics, Database Design.

RESEARCH INTERESTS

Trustworthy Machine Learning: Developing privacy-preserving models and audit empirical privacy budget in machine learning frameworks.
Synthetic Data Generator: Balancing utility and privacy of synthetic data generator.
Cloud Security: Security concerns of cloud systems like docker container.
Computer Vision: Developing machine learning models for early diseases detection using ubiquitous Computing.
Additional: Data Structures and Algorithms, Security event prediction.

RESEARCH EXPERIENCE

Cloud Security

- On Detecting Malicious Code Injection By Monitoring Multi-level Container Activities. [CLOSER 2024] [Paper] [Code]
  - Skills: Container Security, Malicious Code Injection, Kubernetes, Multi-Level Monitoring

Computer Vision

- H2OPulse: Smartphone-assisted Vein Evaluation for Early Recognition of Dehydration. [IMWUT Nov 2024] [Paper] [Code]
  - Skills: Mobile health, Image processing, Siamese neural network

Privacy In Federated Learning

- Auditing Empirical Privacy in Vertical Federated learning framework.
  - Skills: Differential Privacy, Federated Learning, Membership Inference Attack, Feature Inference Attack.

Synthetic Time Series Generator

- Utility and Privacy analysis of synthetic time series generator
  - Skills: Differential Privacy, Membership Inference Attack.

File System Vulnerability in OS

- Mitigating Git File System Vulnerability [Report] [Code]
  - Skills: CVE, Git, eBPF.

HONORS AND AWARDS

- Professional Member, Association for Computing Machinery (ACM), ID: 9085533

- 2nd Place, Graduate Division at UCR Programming Contest, with 628 points among 222 participants.
- Dean's Distinguished Award, University of California, Riverside.
- Conference Speaker, 14th International Conference on Cloud Computing and Services Science.
- RISE Research Grant, Research and Innovation Center for Science and Engineering, BUET.
- Four times Regional Physics Olympiad and One-time National Physics Olympiad Winner.

EXPERIENCE AS REVIEWER

- Humanities and Social Sciences Communications [Springer Nature] [Certificate]

EMPLOYMENT

- Graduate Student Researcher *April 2025 - Present*
- Teaching Assistant
  - CS 170 [Introduction to Artificial Intelligence] *July 2025 – August 2025*
  - CS 163 [Privacy Technologies] [Students' Feedback] *April 2025 – June 2025*
- Site Reliability Engineer, Relisource Software Ltd *April 2024 – September 2024*
- Programmer, Grameen Bank IT Department *June 2023 – March 2024*

RELATED PROJECTS

- Mitigating Git File System Vulnerability [Report] [Code] [Presentation] *April 2025 – May 2025*
  - Re-implemented the famous CVE-2021-21300 and proposed two potential prevention methods like using git alias for safe cloning and an eBPF based solution.
- Stackoverflow Search Engine [Code] [Presentation] *Jan 2025 – March 2025*
  - Combines keyword-based search (using Lucene) and semantic search (using BERT) to retrieve relevant answers and employs a LLM to generate concise and accurate solutions.
- Bangla Caption Generator for Images [Code and Presentation] *Feb 2023 – March 2023*
  - A new model is proposed and implemented that can generate Bangla caption for a given image.
- Bangla Digit Recognition [Code and Report] *Jan 2023 – Feb 2023*
  - A CNN model is built from scratch. The applied model showed 77% independent test accuracy and 91% validation accuracy.
- TCP Libra [Code and Report] *Nov 2021 – Feb 2022*
  - A congestion control algorithm implemented successfully in NS3

TECHNICAL SKILLS

- **Programming Languages:** Assembly, C, C++, C#, Java, Python, CUDA
- **Software Development Framework:** Node.js, React.js, Django, JavaFX, .NET
- **DBMS Tools:** Oracle, PostgreSQL
- **Computer Forensic Tools:** Strace, Sysdig, Wireshark, New Relic
- **Others:** Kubernetes, Docker Container, git, NS3