MD OLID HASAN BHUIYAN

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Homepage: [Md Olid Hasan Bhuiyan - Home Page](https://sizvy.github.io/)

[Google Scholar](https://scholar.google.com/citations?user=FqGRNsAAAAAJ&hl=en) ⋄ [GitHub](https://github.com/Sizvy) ⋄ [LinkedIn](https://www.linkedin.com/in/md-olid-hasan-bhuiyan-970783185/)

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](https://emilianodc.com/)

*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]](https://closer.scitevents.org/?y=2024) [[Paper]](https://www.scitepress.org/Papers/2024/125094/125094.pdf) [[Code]](https://github.com/Sizvy/Thesis-Results)
* 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]](https://dl.acm.org/proceedings) [[Paper]](https://dl.acm.org/doi/10.1145/3729490) [[Code]](https://github.com/ubiquit0us/h2opulse)
* 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]](https://www.linkedin.com/in/md-olid-hasan-bhuiyan-970783185/details/projects/597980710/multiple-media-viewer/?profileId=ACoAACu4BaQBzN_wvzv8ik8wkpWXDIu2GRPnd4I&treasuryMediaId=1750797432925) [[Code]](https://github.com/Sizvy/CVE-2021-21300)
* 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]](https://www.springernature.com/gp) [[Certificate]](https://www.linkedin.com/in/md-olid-hasan-bhuiyan-970783185/details/certifications/1746940525233/single-media-viewer/?profileId=ACoAACu4BaQBzN_wvzv8ik8wkpWXDIu2GRPnd4I)

EMPLOYMENT

* **Graduate Student Researcher**, University of California – Riverside *April 2025 - Present*
* **Teaching Assistant**, University of California - Riverside
  + CS 170 [[Introduction to Artificial Intelligence]](https://www.coursicle.com/ucr/courses/CS/170/) *July 2025 – August 2025*
  + CS 163 [[Privacy Technologies]](https://www.coursicle.com/ucr/courses/CS/163/) [[Students’ Feedback]](https://drive.google.com/file/d/1MoTm6yXtSneVtPCNE2GZcq_WOPWJds-F/view) *April 2025 – June 2025*
* **Site Reliability Engineer**, [Relisource Software Ltd](https://www.relisource.com/) *April 2024 – September 2024*
* **Programmer**, Grameen Bank IT Department  *June 2023 – March 2024*

RELATED PROJECTS

* Mitigating Git File System Vulnerability [[Report]](https://www.linkedin.com/in/md-olid-hasan-bhuiyan-970783185/details/projects/597980710/multiple-media-viewer/?profileId=ACoAACu4BaQBzN_wvzv8ik8wkpWXDIu2GRPnd4I&treasuryMediaId=1750797432925) [[Code]](https://github.com/Sizvy/CVE-2021-21300) [[Presentation]](https://www.linkedin.com/in/md-olid-hasan-bhuiyan-970783185/details/projects/597980710/multiple-media-viewer/?profileId=ACoAACu4BaQBzN_wvzv8ik8wkpWXDIu2GRPnd4I&treasuryMediaId=1750797153899) *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]](https://github.com/Sizvy/CS242_Project) [[Presentation]](https://www.linkedin.com/in/md-olid-hasan-bhuiyan-970783185/details/projects/597825870/multiple-media-viewer/?profileId=ACoAACu4BaQBzN_wvzv8ik8wkpWXDIu2GRPnd4I&treasuryMediaId=1750796999148) *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]](https://github.com/Sizvy/Bangla-Caption-Generator-for-images) *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]](https://github.com/Sizvy/Bangla-Caption-Generator-for-images) *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]](https://github.com/Sizvy/Tcp-LIbra) *Nov 2021 – Feb 2022*
  + A congestion control algorithm implemented successfully in NS3
* Others
  + [Ray Tracing](https://github.com/Sizvy/Ray-Tracing/tree/main), [Mancala (Adversarial Search)](https://github.com/Sizvy/mancala/tree/master), [nPuzzle (A\* Search)](https://github.com/Sizvy/npuzzle), [Casper-The Ghost](https://github.com/Sizvy/Casper_The_Ghost/tree/master), [Typing Master](https://github.com/Sizvy/typing-master)

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