

MAZHARUL ISLAM

✉ mislam9@wisc.edu 🌐 [Website](#) ◇ [Google Scholar](#) 🐙 [GitHub](#) in [LinkedIn](#)

RESEARCH INTERESTS

Topics User authentication, online abuse detection and prevention, privacy enhancing techniques
Areas Cryptography, machine learning, empirical analysis.

EDUCATION

University of Wisconsin-Madison

Madison, WI

- Ph.D. student in Computer Science, Advisor: Prof. Rahul Chatterjee.
- M.Sc. in Computer Science, CGPA: 3.75/4.00

2020 - Present
2020 - 2022

Bangladesh University of Engineering & Technology (BUET)

Dhaka, Bangladesh

- B.Sc. in Computer Science and Engineering, CGPA: 3.73/4.00

2012 - 2017

WORK EXPERIENCES

University of Wisconsin-Madison

Madison, WI

- Graduate Research Assistant, Research Lab: [MadS&P](#)
- Projects: Working on enhancing security of password based user authentication using techniques from applied cryptography and machine learning.

Supervisor: [Prof. R. Chatterjee](#)
Aug 2020 - Present

Visa Research

Palo Alto, CA

- Ph.D. Research Intern, Systems security team
- Project: Account recovery problem in passwordless user authentication.

Supervisor: [Sunpreet S. Arora](#)
May 2023 - Aug 2023

Visa Research

Palo Alto, CA

- Ph.D. Research Intern, Systems security team
- Project: Designing multi-party computation (MPC) friendly complex non-linear functions used in deep neural networks.

Supervisor: [Sunpreet S. Arora](#)
May 2022 - August 2022

University of Wisconsin-Madison

Madison, WI

- Graduate Teaching Assistant, [CS 642-Introduction to Information Security](#)
- I conducted office hours, prepared and graded homeworks for a class of more than 90 students.

Aug 2020 - Dec 2020

United International University

Dhaka, Bangladesh

- Lecturer, Department of Computer Science
- I was the primary instructor for two undergraduate-level courses [CSE-477: Network Security](#) and [CSE-315: Data communications](#) for more than 300 students throughout six semesters.

Jul. 2017 - Jul. 2019

iPay Systems Ltd

Dhaka, Bangladesh

- Software Engineer, Front-end developer
- I developed a firewall manager on top of [iptables](#) to help the network administrator add new rules delete old rules, and modify existing rules

May 2017 - Jul. 2017

RESEARCH IMPACT

- Might I Get Pwned (MIGP) [C4] is deployed at [Cloudflare](#) (a major CDN provider) to warn users from selecting passwords similar (and same) to a breached password in a secure way ([official blog link](#) [↗](#))
- My proposed changes of [Spring security](#) framework in [C3] have improved its documentation ([Link](#) [↗](#)) and contributed a new fix ([Link](#) [↗](#)) on 6.0.x release.

SELECTED PUBLICATIONS

Conference Papers

- [C6] **Mazharul Islam***, Marina Sanusi Bohuk*, Paul Chung, Thomas Ristenpart, Rahul Chatterjee (*co-first authors).
“*Araña: Discovering and Characterizing Password Guessing Attacks in Practice*”, 32nd USENIX Security 2023, Anaheim, CA (To appear).
[\[Acceptance rate: TBD%\]](#), [\[PDF\]](#)[\[Source Code\]](#)
- [C5] Marina Sanusi Bohuk, **Mazharul Islam**, Sulman Ahmad, Mike Swif, Thomas Ristenpart, Rahul Chatterjee
“*Gossamer: Securely Measuring Password-based Logins*”, 31st USENIX Security 2022, Boston, MA
[\[Acceptance rate: 17.2%\]](#) [\[PDF\]](#) [\[Source Code\]](#) [\[Media Coverage\]](#)
- [C4] Bijeeta Pal, **Mazharul Islam**, Marina Sanusi Bohuk, Nick Sullivan, Luke Valenta, Tara Whalen, Christopher Wood, Thomas Ristenpart, Rahul Chatterjee
“*Might I Get Pwned: A Second Generation Compromised Credential Checking Service*”, 31st USENIX Security 2022, Boston, MA
[\[Acceptance rate: 17.2%\]](#) [\[PDF\]](#) [\[Source code\]](#)[\[Media Coverage\]](#)
- [C3] **Mazharul Islam**, Sazzadur Rahaman, Na Meng, Behnaz Hassanshahi, Padmanabhan Krishnan, Danfeng Yao.
“*Coding Practices and Recommendations of Spring Security for Enterprise Applications*”, IEEE-SecDev 2020
[\[Acceptance rate = 39%\]](#) [\[PDF\]](#) [\[Presentation Video\]](#)
- [C2] **Mazharul Islam**, Novia Nurain , Mohammad Kaykobad , Sriram Chellappan , A. B. M. Alim Al Islam
“*HEliOS: Huffman Coding Based Lightweight Encryption Scheme for Data Transmission*”
16th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services ACM, Houston, TX, USA, 2019
[\[h-index 40, Acceptance rate: 30%\]](#) [\[PDF\]](#).
- [C1] **Mazharul Islam**, MD. Nazmuddoha Ansary, Novia Nurain, Salauddin Parvez Shams, A. B. M. Alim Al Islam
“*Attacking a Live Website by Harnessing a Killer Combination of Vulnerabilities for Greater Harm*”
5th International Conference on Networking, Systems and Security 2018 , Dhaka, Bangladesh [\[Acceptance rate: 29%\]](#), [\[PDF\]](#)

Journal Papers

- [J2] **Mazharul Islam**, Kowshika Sarker, Trisha Das, Rezwana Reaz, Md. Shamsuzzoha Bayzid
“*STELAR: A statistically consistent coalescent-based species tree estimation method by maximizing triplet consistency*”, [BMC Genomics](#) **21**, 136 (2020)
[\[Impact factor: 3.9\]](#) [\[PDF\]](#) [\[Source Code\]](#)
- [J1] Sumit Tarafder, **Mazharul Islam**, Swakkhar Shatabda, Atif Rahman
“*Figbird: A probabilistic method for filling gaps in genome assemblies*”, [Bioinformatics](#), Volume 38, Issue 15
[\[Impact factor: 6.9\]](#) [\[PDF\]](#) [\[Source code\]](#)

Under Submission

- **Mazharul Islam**, Sunpreet S. Arora, Rahul Chatterjee, Peter Rindal, Maliheh Shirvanian
“*Approximating Complex Neural Network Activation Functions for Secure Computation*”
[\[PDF available on request\]](#) [\[Provisional patent filed\]](#)

AWARDS

- Travel Grants: [Privacy Preserving Machine Learning \(PPML\)](#), 2022
- CS Fellowship: Given to 15 – 20% top admitting graduate students at UW-Madison, 2020
- Best Poster: NSysS conference, 2015
- Programming Contest: ACM-ICPC Dhaka regional, Bangladesh 17th/170 teams.
- Academic Excellence: Dean List Awards & University Merit List Scholarship for Academic Result, BUET.

SKILLS

Languages	Python, C++, Java, Go, HTML, CSS
Frameworks	Pytorch, Django, EMPToolkit
Tools	Git, Docker

EXTRA CURRICULAR ACTIVITIES

Reviewer	• Artifact evaluation PC member USENIX 2022 (2), Externally reviewed papers from USENIX 2022 (1)
Social Work	• Worked as field volunteer and took sessions on improving health hygiene and mental development of the children of sex-workers at nonprofit organization named Project Pothchola (2017). • Running the “ Madison Tech Clinic ” as part of “ Domestic Abuse Intervention Services (DAIS) ” at Madison to provide services to give consultation to victims of tech-enabled intimate partner violence (2022 — 2023)