Nazmus Sakib

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Summary

- Currently a third-year Ph.D. student in Cybersecurity at the University of Colorado Colorado Springs, with a research focus on vulnerability identification and the development of security solutions for distributed networked systems. Research aims to enhance the security and reliability of distributed network architectures.
- Earned a Master's degree in Computer Science (Research Mode) from the University of Malaya (UM), Malaysia in 2020, and a Bachelor of Science (Engineering) degree in Computer Science and Engineering from Shahjalal University of Science and Technology (SUST), Bangladesh in 2012.
- Brings over seven years of teaching experience at the university level, along with one year of industry experience as a software engineer.
- Areas of expertise include designing countermeasures against threats in Peer-to-Peer (P2P) networks and assessing the reliability of distributed networked systems.
- Having good analytical & communication skills, a collaborative approach to teamwork, innovative thinking, and effective leadership abilities.

Education

January 2023- Present	**Ph.D. in Cybersecurity** *The University of Colorado Colorado Springs (UCCS), USA* **CGPA:** *3.77 out of 4.00* **Advisor:** Dr. Sang-Yoon Chang
February 2018- August 2020	**Master of Computer Science (Research Mode)** *University of Malaya (UM), Malaysia* **Advisor:** Dr. Rodina Binti Ahmad
January 2008- June 2012	**Bachelor of Science (Engineering) in Computer Science and Engineering** *Shahjalal University of Science and Technology (SUST), Bangladesh* **CGPA:** 3.50 out of 4.00 **Advisor:** Israt Jahan

Professional Experiences

August 2025 – December 2025	**Graduate Teaching Assistant | Computer Science Department | UCCS** *Job responsibilities:* • Instructor for **CS 1150: Principles of Computer Science**. Taught Java programming; prepared and delivered lectures, live-coding demos, and in class exercises; developed assignments and quizzes aligned with learning outcomes. • Teaching support for **CS 2060: Programming with C**. Led tutoring sessions, graded programming assignments and exams, and held office hours.

June 2025 – July 2025	**Summer Conference Assistant | UCCS** *Job responsibilities:* • Supported youth camps and large-scale conferences by managing front desk operations, assisting with guest services, and event setup. • Collaborated with a diverse team to ensure smooth hospitality operations in a fast-paced, service-oriented environment. • Strengthened skills in communication, problem-solving, teamwork, and customer service.
January 2025- May 2025	**Graduate Teaching Assistant | Computer Science Department | UCCS** *Job responsibilities:* • Teaching Assistant for **CS 3020 C#**. The responsibilities are grading, tutoring, recitation, office hours, and attending classes. • Teaching Assistant for **CS 3910 System Administration and Security**. The responsibilities are grading, tutoring, recitation, office hours, and attending classes. • Teaching Assistant for **CS 4920 Applied Cryptography**. The responsibilities are grading, tutoring, recitation, office hours, and attending classes.
August 2024- May 2025	**Mentored Doctoral Fellowship | Graduate School | UCCS** *Job responsibilities:* • **Problem-Solving:** Collaborated to enhance distributed networked security by identifying and addressing vulnerabilities in Bitcoin and developing robust countermeasures against novel threats. • **Data Analysis:** Analyzed P2P network behaviors and utilized machine learning for peer beneficialness prediction, and anomaly detection.
June 2023- December 2024	**Graduate Research Assistant | Computer Science Department | UCCS** *Job responsibilities:* • **Problem-Solving:** Collaborated on strengthening distributed network security by identifying vulnerabilities in the Bitcoin network and designing effective countermeasures against emerging threats. • **Data Analysis:** Investigated P2P network behavior and applied machine learning techniques for predicting peer beneficialness and detecting anomalies. • **Detail-Oriented:** Performed in-depth analyses and contributed to peer-reviewed publications and conference presentations, including responsible vulnerability disclosures.

January 2023- May 2023	**Departmental Teaching Assistant	Computer Science Department	UCCS** *Job responsibilities:* • **Teaching assistant for CS 1450 Data Structures**. The responsibilities are grading, tutoring, recitation, office hours, and attending classes.
January 2022- December 2022	**Assistant Professor	Department of Computer Science and Engineering	Dhaka International University, Bangladesh** *Job responsibilities:* • **Teaching and Curriculum Development:** Prepare and deliver lectures, tutorials, and lab sessions for undergraduate and graduate courses. Develop and update course materials, syllabus, and assessments aligned with academic standards. Supervise student projects, internships, and thesis work. • **Research and Scholarly Activities:** Conduct independent and collaborative research in computer science and engineering fields. Publish research findings in peer-reviewed journals and present at academic conferences. Seek research funding and participate in academic grant applications. • **Student Mentorship and Advising:** Advise students on academic and career matters. Guide students in research projects, competitions, and extracurricular academic activities.
February 2018- March 2020	**Graduate Research Assistant	Software Engineering Department	UM** *Job responsibilities:* • **Problem-Solving:** Developed a hybrid paper recommendation model addressing cold-start issues by leveraging public metadata and 2-level citation context. • **Data Analysis:** Extracted and analyzed scholarly data using citation matrices and evaluated models with Precision, Recall, F1, MAP, and MRR. • **Detail-Oriented:** Conducted rigorous experiments and published findings in peer-reviewed journals, ensuring high research accuracy and quality.
February 2018- January 2020	**Research Fellow	Bangabandhu Science and Technology Fellowship Trust	Ministry of Science and Technology	People's Republic of Bangladesh.** *Job responsibilities:* • Conducted advanced postgraduate research in computer science, focusing on intelligent systems for scientific paper recommendation. • Contributed to the advancement of data-driven solutions aligned with national priorities in education, research, and innovation.

May 2014- December 2017	**Lecturer | Department of Computer Science and Engineering | Dhaka International University, Bangladesh** *Job responsibilities:* • **Teaching and Curriculum Development:** Delivered lectures, tutorials, and lab sessions for undergraduate courses; developed and updated course syllabus, assessments, and instructional materials in alignment with academic standards. Supervised student thesis work, projects, and internships. • **Research and Scholarly Activities:** Conducted research in areas including recommender systems and distributed computing; published peer-reviewed articles and presented findings at academic conferences. Engaged in collaborative research and supported academic grant proposals. • **Student Mentorship and Advising:** Provided academic and career guidance to students; mentored student research projects and encouraged participation in competitions and extracurricular activities.
October 2013- April 2014	**Junior Software Engineer | MicroMac Techno Valley Ltd, Bangladesh** *Job responsibilities:* • Developed dynamic and responsive websites using PHP, MySQL, and the CodeIgniter framework. • Contributed to the design and development of custom software solutions for banking clients, focusing on secure data handling and transaction processing. • Collaborated with cross-functional teams to gather requirements, implement features, and ensure software quality through testing and debugging.

Awards and Achievements

2024	**Recipient-** Mentored Doctoral Fellowship, Graduate School, UCCS
2023	**Full Tuition** Scholarship at UCCS
2020	**"Best Paper Award"** for the paper "Renal cell cancer nuclei segmentation from histopathology image using synthetic data" in langkawi, Malaysia
2018	**Research Fellow,** Bangabandhu Science and Technology Fellowship Trust, Ministry of Science and Technology, People's Republic of Bangladesh

Research Publications

Peer Reviewed Journals

1. Amanul Islam, **Nazmus Sakib**, Kelei Zhang, Simeon Wuthier, and Sang-Yoon Chang. "Anonymous Networking Detection in Cryptocurrency Using Network Fingerprinting and Machine Learning." Electronics 14, no. 11 (2025): 2101.

https://doi.org/10.3390/electronics14112101

2. Amanul Islam, Fazidah Othman, **Nazmus Sakib**, and Hafiz Md Hasan Babu. "Prevention of Shoulder-Surfing Attacks Using Shifting Condition With the Digraph Substitution Rules." Artificial Intelligence and Applications Vol. 1 No. 1 (2023).

   https://doi.org/10.47852/bonviewAIA2202289

3. **Nazmus Sakib**, Rodina Binti Ahmad, Mominul Ahsan, Md Abdul Based, Khalid Haruna, Julfikar Haider, and Saravanakumar Gurusamy. "A Hybrid Personalized Scientific Paper Recommendation Approach Integrating Public Contextual Metadata." IEEE Access 9 (2021): 83080-83091.

   https://doi.org/10.1109/ACCESS.2021.3086964

4. **Nazmus Sakib**, Rodina Binti Ahmad, and Khalid Haruna. "A Collaborative Approach Toward Scientific Paper Recommendation Using Citation Context." IEEE Access 8 (2020): 51246-51255.

   https://doi.org/10.1109/ACCESS.2020.2980589

Peer Reviewed Conferences

1. Sang-Yoon Chang, **Nazmus Sakib**, Simeon Wuthier, and Keith Paarporn. "Analyzing and Modeling Connection Impact on Distributed Consensus in Cryptocurrency Blockchain." In NOMS 2025-2025 IEEE Network Operations and Management Symposium, pp. 1-5. IEEE, 2025.

   https://doi.org/10.1109/NOMS57970.2025.11073661

2. Amanul Islam, **Nazmus Sakib**, Kelei Zhang, Simeon Wuthier, and Sang-Yoon Chang. "Network Fingerprinting Using Machine Learning for Anonymous Networking Detection in Cryptocurrency." In 2025 IEEE 22nd Consumer Communications & Networking Conference (CCNC), pp. 1-6. IEEE, 2025.

   https://doi.org/10.1109/CCNC54725.2025.10976162

3. **Nazmus Sakib**, Simeon Wuthier, Kelei Zhang, Xiaobo Zhou, and Sang-Yoon Chang. "From Slow Propagation to Partition: Analyzing Bitcoin Over Anonymous Routing." In 2024 IEEE International Conference on Blockchain and Cryptocurrency (ICBC), pp. 377-385. IEEE, 2024.

   https://doi.org/10.1109/ICBC59979.2024.10634476

4. Simeon Wuthier, **Nazmus Sakib**, and Sang-Yoon Chang. "Positive Reputation Score for Bitcoin P2P Network." In 2024 IEEE 21st Consumer Communications & Networking Conference (CCNC), pp. 519-524. IEEE, 2024.

   https://doi.org/10.1109/CCNC51664.2024.10454756

5. Md Shamim Hossain, and **Nazmus Sakib**. "Renal Cell Cancer Nuclei Segmentation from Histopathology Image Using Synthetic Data." In 2020 16th IEEE International Colloquium on Signal Processing & Its Applications (CSPA), pp. 236-241. IEEE, 2020. **Best Paper Award**.

   https://doi.org/10.1109/CSPA48992.2020.9068701

6. Md Mahabubur Rahman, Md Masud Rana, Md Shamim Anower, **Nazmus Sakib**, Kisalaya Chakrabatri, and Alok Kumar Paul. "An SPR-based Optical Biosensor with Shared Plasmonic

Materials and Optimized Graphene Layer: An Angular Interrogation Approach." In 2020 IEEE Region 10 Symposium (TENSYMP), pp. 1680-1683. IEEE, 2020.

https://doi.org/10.1109/TENSYMP50017.2020.9230632

Publications Under Review

1. **Nazmus Sakib**, Simeon Wuthier, Amanul Islam, Xiaobo Zhou, Jinoh Kim, Ikkyun Kim, and Sang-Yoon Chang. "DyPBP: Dynamic Peer Beneficialness Prediction for Cryptocurrency P2P Networking" – IEEE CNS 2025.

2. Security Investigation of Address Manager in Bitcoin P2P Network - In preparation

3. Analyzing Bitcoin Over Low Latency Tor - In preparation

Dissertations

1. **Thesis:** "A Personalized Scientific Paper Recommendation Model Using Contextual Information" under the supervision of Dr. Rodina Binti Ahmad, Associate Professor, Department of Software Engineering, Universiti of Malaya, Malaysia."

2. **Thesis:** "E-Government Model in Bangladesh: An NID Based Framework" under the supervision of Israt Jahan, Lecturer, Department of Computer Science and Engineering, Shahjalal University of Science and Technology, Bangladesh."

Selected Talks

April 8, 2025	**Lecture:** Blockchain and Cryptocurrency, Teaching Assistant- CS 4920 Applied Cryptography, University of Colorado, Colorado Springs
January 7, 2024	**Conference Presentation:** Positive Reputation Score for Bitcoin P2P Network, IEEE 21st Consumer Communications & Networking Conference (CCNC)
April 28, 2023	**Poster Presentation:** Behavior-based Positive Reputation Score for Bitcoin P2P Network, N3SP Spring Forum, US Air Force Academy
February 28, 2020	**Conference Presentation:** Renal Cell Cancer Nuclei Segmentation from Histopathology Image Using Synthetic Data, 16th IEEE International Colloquium on Signal Processing & Its Applications (CSPA)

Technical Skills and Competencies

Cryptography	Expertise in traditional applied cryptography - Mentored students in cryptography courses, emphasizing practical usage and implications of the cryptographic principles.
AI/ML	Applied machine learning to self-extracted technical datasets, utilizing python for data visualization/analysis.
Languages	C/C++, Python, Java, Unix/Bash, JavaScript, C#/Visual Basic,

Assembly, Ruby, PHP, and Regular Expression pattern matching

Relevant Coursework   Applied Cryptography, Fundamental of Computer/Network Security, Homeland Security & Cyber Security, Computer Communication, Privacy and Censorship, Reinforcement Learning, Networks, Crowds, and Markets

Leadership Experience and Professional Service

August 2024 - Present   **Member**, Graduate Student Association at UCCS

July 2023 - Present   **Student Member**
- IEEE Student Member

February 2018 – January 2020   **Member**, Graduate Student Association at UM

July 2022 – December 2022   **President,** Computer Networking Club, DIU, Bangladesh

January 2021 – December 2021   **Vice President,** Computer Programming Club, DIU, Bangladesh

January 2015 – December 2017   **Programming Contest Judge,** DIU, Bangladesh

January 2010 – June 2012   **Member**, Artificial Intelligence Research (AIR) Group, SUST, Bangladesh

References

Available on Request