SHOWKOT HOSSAIN

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RESEARCH INTERESTS

Security and Privacy, Distributed Systems, Confidential Computing

EDUCATION

Ph.D. in Computer Science   Aug 2024 – Present
University of Notre Dame   *Notre Dame, IN, USA*

- GPA: 3.91/4.0

Bachelor of Science in Computer Science and Engineering   Jan 2016 – Jan 2020
University of Dhaka   *Dhaka, Bangladesh*

PUBLICATIONS

5. Akis Linardos, Theresa Willem, Alena Buyx, **Showkot Hossain**, Taeho Jung, Dimitrios Makris, Spyridon Bakas. **Consentful-by-Design: A Perspective on Safeguarding Data Ownership from Generative AI Leveraging Lessons from the Healthcare Domain**. *AI & SOCIETY, Springer London, pp. 1–13*, 2026.

4. **Showkot Hossain**, Wenyi Tang, Changhao Chenli, Haijian Sun, WenZhan Song, Seokki Lee, Mic Bowman, Taeho Jung. **MtDB: A Decentralized Multi-Tenant Database for Secure Data Sharing**. *8th IEEE International Conference on Blockchain (IEEE Blockchain 2025), pp. 79–86*, 2025.

3. Avery Hughes, **Showkot Hossain**, Wenyi Tang, Taeho Jung, Changhao Chenli. **SecLog: Atomic-swap Based Secure Logging for Decentralized Data Sharing**. *International Conference on Metaverse (META-VERSE 2025), pp. 115–124, Springer*, 2025.

2. MH Rakib, **Showkot Hossain**, Mosarrat Jahan, Upama Kabir. **A Blockchain-Enabled Scalable Network Log Management System**. *Journal of Computer Science, 18(6), 496–508*, 2022.

1. MH Rakib, **Showkot Hossain**, Mosarrat Jahan, Upama Kabir. **Towards Blockchain-Driven Network Log Management System**. *IEEE 8th International Conference on Smart City and Informatization (iSCI)*, 2020.

RESEARCH EXPERIENCE

Graduate Research Assistant   Aug 2024 – Present
Data Security and Privacy Lab (DSP-Lab), University of Notre Dame   *Notre Dame, IN, USA*
Advisor: Dr. Taeho Jung

- Working in a collaborative team to research and develop Web3DB, a decentralized platform for secure data sharing and management; published several high-impact conference papers.

Research Assistant   Jan 2020 – Dec 2020
Cyber Security Lab, University of Dhaka   *Dhaka, Bangladesh*
Advisors: Dr. Mosarrat Jahan and Dr. Upama Kabir

- Built a prototype system for secure provenance tracking and real-time monitoring using PKI and blockchain; published one peer-reviewed journal article and one conference paper.

PROFESSIONAL EXPERIENCE

Software Engineer, Level 3   Nov 2023 – Jul 2024
Itransition Software Bangladesh Limited   *Dhaka, Bangladesh*

- Collaborated with global clients to design and implement high performance APIs for Product Madness, a leading mobile game studio with 5M+ monthly active users, consistently meeting release deadlines.

- Led a team of 5 developers to develop and maintain features using Spring Boot(Java), ReactJS, and PostgreSQL utilizing skills in JIRA (Issue Tracking), Git (Version Control), JUnit and Mockito (Unit Testing), Dev Tools (Debugging), and Agile development process.

Software Engineer, Level 2   Mar 2023 – Nov 2023
Kona Software Lab Limited   *Dhaka, Bangladesh*

- Implemented authentication & authorization system for microservices handling 13M+ KonaCard users.
- Redesigned database architecture and developed a migration script, reducing query latency by 25%.

Software Engineer, Level 1   Oct 2020 – Mar 2023
Dohatec New Media   *Dhaka, Bangladesh*

- Researched and developed a microservices-based backend for ePMIS—the Government of Bangladesh's Electronic Project Management Information System—prioritizing modern technologies to ensure high performance and scalability.
- Collaborated in an Agile environment with cross-functional teams to design and develop high-performance RESTful APIs using Spring (Java), AngularJS, and SQL Server.

TEACHING EXPERIENCE

Teaching Assistant   Fall 2025
CSE-20110: Discrete Mathematics, University of Notre Dame   *Notre Dame, IN, USA*

MENTORSHIP EXPERIENCE

All mentees were supervised in conjunction with Dr. Taeho Jung (University of Notre Dame).
* Mentees from University of Notre Dame, IN, USA.
@ Mentees from Indiana Institute of Technology, IN, USA.

Spring 2026
Will Armsworthy*, Paola Lopez* and Aaron Wang*

Fall 2025
Will Armsworthy*, Maria C. Leal* and Avery Hughes[@]

Spring 2025
Ryan Nahm*, Aaron Wang*, Avery Hughes[@]

Fall 2024
Gustavo Aniceto*, Jonathan D'Alonzo*

GRANTS & SCHOLARSHIPS

Travel Grants, University of Notre Dame, 2025
1,132$ grants to participate in IEEE Blockchain 2025 Conference as author (held in Zhengzhou, China).

Research Assistantship, University of Notre Dame, 2024 - 2029
Tuition scholarship, including health insurance and bimonthly stipends.

ICT Innovation Fund, ICT Division, Bangladesh, 2020 - 2021
Grant of 5,000 USD for innovative project development.

Government Education Board Scholarship, Bangladesh, 2016 - 2020
Awarded for outstanding results (top 1%) in Higher Secondary School Certificate Examination, 2015.

Government Education Board Scholarship, Bangladesh, 2013 - 2015
Awarded for outstanding results (top 2%) in Secondary School Certificate Examination, 2013.

Government Education Board Scholarship, Bangladesh, 2011 - 2012
Awarded for outstanding results (top 1%) in Junior School Certificate Examination, 2010.

PROFESSIONAL SERVICE

Reviewer, IEEE International Conference on Blockchain and Cryptocurrency (ICBC 2026)
Reviewer, IEEE International Blockchain and Cryptocurrency (ICBC 2025)
Sports & Cultural Secretary, Bangladeshi Students Association of Notre Dame (BDSA-ND) (2025–26)

Student Volunteer, International Conference on Innovation and Engineering (ICIET 2019)
Mentor, SCB-PA Inter School and College Programming Contest (ISCPC 2019)
Tutor, Provided private tutoring to high school and undergraduate students (2016–2021)
Member, Badhan, Organized and participated in blood donation and educational workshops (2016–2020)
Co-founder, Jiboner Alo, Worked on education for orphan and underprivileged children (2017– 2024)

TECHNICAL SKILLS

Programming	Python, Java, C/C++, Javascript, Solidity
Web Dev	Spring Boot, React, Node.js, FastAPI, Parse, JPA, Hibernate, Rabbit MQ, Kafka, ELK Stack, Gradle, JUnit, Mockito
Databases	PostgreSQL, MS SQL Server, MongoDB, Redis
ML & Blockchain	Pandas, Numpy, PyTorch, TensorFlow, Smart Contracts, HL Fabric
Misc	TEE, Docker, Jenkins, Nexus, Postman, Swagger, Jmeter, Jira, Git

SELECTED PROJECTS

PostStream ⚙

- A modern micro-blogging application inspired by Twitter, built with React and Parse Server. Features include real-time content discovery, social interactions, and dual-platform deployment.

Emotion ⚙

- Built a BERT-based multi-class classifier for 13 tweet emotions, improving accuracy on an imbalanced dataset through synonym augmentation, ChatGPT-generated synthetic data, and strategic class filtering.

Spam Detector ⚙

- Developed a DistilBERT-based spam detection system on the Enron dataset, achieving 99.36% accuracy with balanced precision/recall, outperforming traditional ML and deep learning baselines.

INTERNSHIPS

Blockchain Developer   Jun 2020 – Aug 2020
Technohaven Company Limited   *Dhaka, Bangladesh*

- Studied blockchain architecture, consensus algorithms, digital identity, and blockchain applications.
- Developed a prototype supply chain traceability system using hyperledger fabric. [Code]

ACHIEVEMENTS

International Blockchain Olympiad 2020, Received Award of Merit (Team of 4)
Blockchain Olympiad Bangladesh 2020, 9th Place (Team of 4)

REFERENCES

Dr. Taeho Jung   **Dr. WenZhan Song**
Associate Professor   Professor
Department of Computer Science and Engineering   School of Electrical and Computer Engineering
University of Notre Dame, IN, USA   University of Georgia, Athens, GA
Email: tjung@nd.edu   **Email**: wsong@uga.edu
Relation: Ph.D. Advisor   **Relation**: Research Collaborator