

Ismail Hossain

PhD Student at School of Computing

Research Assistant at SUPREME Lab.

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🔗 scholar.google.com/citations?user=FexryyIAAAAJ&hl=en

🔗 [ismail102.github.io/](https://github.com/ismail102)

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📍 Illinois, United States

Research Interest

My research interests are primarily in federated learning, machine learning, deep learning, online and social networks, IoT, cyber-physical systems, AI security, mobile crowdsourcing, and edge computing.

Research Experience

Conference Papers

Areas: Social Networks, NLP, Federated Learning, Machine Learning, Differential Privacy, Mobile Crowdsourcing

- “A Visual Approach to Tracking Emotional Sentiment Dynamics in Social Network Commentaries” (IEEE/ACM ASONAM), Nov 2023 (Accepted)
- “Collaborative Differentially Private Federated Learning Framework for the Prediction of Diabetic Retinopathy” (IEEE ICAIC), Dec 2022
- “Machine Learning and Sentimental Analysis for Predicting Environment Lead Toxicity in Children at the ZIP Code Level” (IEEE ICAIC), Dec 2022
- “Towards Federated Learning-based Contraband Detection within Airport Baggage X-Rays” (IEEE ICM-LANT), Nov 2022
- “An Evolutionary Population Census Application Through Mobile Crowdsourcing” (Springer ICICO), Oct 2020

Workshop Papers

Areas: Federated Learning, Machine Learning

- “A Novel Hierarchical Federated Learning with Self-Regulated Decentralized Clustering” (ACM CCSC), Oct 2022
- “Federated Learning-based Contraband Detection within Airport Baggage X-Rays” (ACM CCSC), Oct 2022
- “Prediction of Childhood and Pregnancy Lead Poisoning Using Deep Learning” (ACM CCSC), Oct 2022

Reviewer Experience

Reviewed two research articles on Online & Social Networks and Machine Learning (ASONAM 2023)

Achieved experience with others' paper writing and presenting style that will remind me when writing papers

Professional Experience

Samsung R&D Institute Bangladesh (SRBD)

Sr. Software Engineer

Feb. 2019 – Aug. 2022

Dhaka, Bangladesh

- Specialized in web-based application development tailored for 4G and 5G technologies, while serving as a developer at Samsung Electronics.
- Proficiently conducted requirement analysis, performed static analysis, and actively contributed to process improvement efforts.
- Demonstrated expertise in enhancing and optimizing legacy software systems within the organization.
- Successfully engaged in remote collaboration with clients and provided guidance.
- Undertook a business trip to Suwon, South Korea, for a crucial in-person meeting and the launch of a new module.
- Took ownership of projects, from initiation to completion, displaying a remarkable ability to work autonomously with minimal guidance.
- Pioneered innovative ideas and actively participated in patent generation activities.
- Accomplished over 100 Jira tasks and efficiently resolved more than 20 Product Lifecycle Management (PLM) issues, achieving a noteworthy low Turnaround Time (TAT) count of [4.5].
- Recognized as the top contributor in August 2022, with an impressive record of over 800 commits, 50+ pull requests, and 300+ code reviews.

Programming Skill

Online and Onsite Programming Contests

2014 – 2022

Competitive Programmer

Bangladesh

- Solved 1000+ problems in different Online Judge (i.e. Leetcode, Codeforces, Uva, LightOj, SPOJ, HackerRank)
- Participation, National level, Divisional level and ACM International Collegiate Programming Contest (ICPC), Dhaka Regional, 2018
- Prize-winning in weekly and monthly contests hosted by Samsung R&D.
- Capability of analyzing program time and memory complexity
- Expertise in Data Structures (LinkedList, Stack, Queue, Heap, HashMap, Trie Tree, BST) and Algorithms (Binary Search, Graph Theory, Dynamic Programming, Number Theory)

Technical Expertise

Programming Languages : C, C++, Java, Python

Frameworks & Platforms : Numpy, Scikit-learn, TensorFlow, PyTorch, Hugging-face, PowerBI, Tableau, Spark, Spring Boot, NodeJS, Angular, AgGrid, Angular Material, JUnit, Mockito, Bootstrap, Android

Development Tools : Git, GitHub, IntelliJ IDEA, Visual Studio Code, PyCharm, Anaconda, MatLab

Dataset : MySQL (RDMS), Mongo (NoSQL)

Achievements

Team rank 16th in the USA and 4th in Illinois : U.S. Dept. of Energy CyberForce Competition, 2022
Outstanding Collaborator Award : Quarter 1, Samsung R&D Institute, Bangladesh, 2021
Winner, Silver Category : Quarter 4, Software Code Review Contest 2020, Network Global R&D Centers, Samsung Electronics
Advance Level Certificate : Samsung Global Software Certificate on Competitive Programming Contest, 2019

Academic Credentials

PhD in Computer Science Southern Illinois University Carbondale, IL, USA
School of Computing's PhD Program Fall 2022 – Present

Fully Funded Scholarship

CGPA: 3.94 out of 4

BS in Computer Science & Engineering Chittagong University of Engineering & Technology (CUET)
Bachelor's degree program Mar. 2014 – Nov. 2018

Major: Computer Science & Engineering

Final CGPA: 3.47 out of 4

Undergrad Major Project

Population Census App

Android | Java | Firebase | MCS Technique

- A demo app for national census using mobile crowdsourcing. It includes data collection, worker location tracking via Google Maps, redundancy checks, two-way verification, and real-time result generation.

References

Dr. Sajedul Talukder

Assistant Professor | School of Computing

Director of SUPREME Lab.

Southern Illinois University Carbondale, IL, USA

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