

SARMISTHA SARNA GOMASTA

Amherst, Massachusetts

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RESEARCH INTEREST

Human-Computer Interaction, Information Retrieval, Accessibility, Usable Security and Privacy, Decentralized Governance

EDUCATIONAL QUALIFICATION

University of Massachusetts, Amherst

Sep 2023 – Present

MS/PhD in Computer Science

Advisor : Dr. Narges Mahyar

Jahangirnagar University

Mar 2017 – June 2020

B.Sc. in Computer Science and Engineering (Dean's List All Semesters)

CGPA: 3.82/4.00 (Rank: 1/65)

Thesis Dissertation: PharmaChain: Blockchain-based Drug Supply Chain Provenance Verification System

PUBLICATIONS & PREPRINTS

- PharmaChain: Blockchain-based Drug Supply Chain Provenance Verification System. **Sarmistha Sarna Gomasta**, Aditi Dhali, Tahlil, Md. Musfique Anwar, A B M Shawkat Ali. Published in the proceedings of **Heliyon, Elsevier**.[\[Paper\]](#)
- AlgoCert: Adopt Non-transferable NFT for the Issuance and Verification of Educational Certificates using Algorand Blockchain. Tahlil Tahlil, **Sarmistha Sarna Gomasta**. Published in the 9th proceedings of the Asia-Pacific Conference on Computer Science and Data Engineering, Gold Coast, Australia (**CSDE-2022**).[\[Paper\]](#)
- Query-oriented Topical Influential Users Detection for Top- k Trending Topics in Twitter. **Sarmistha Sarna Gomasta**, Aditi Dhali, Md. Musfique Anwar, Iqbal H. Sarker. Published in the proceedings of **Applied Intelligence, Springer Nature 2022**.[\[Paper\]](#)
- Attribute-driven Topical Influential Users Detection in Online Social Network. Aditi Dhali, **Sarmistha Sarna Gomasta**, Md. Musfique Anwar. Published in the Asia-Pacific Conference on Computer Science and Data Engineering proceedings, Gold Coast, Australia (**CSDE-2020**). [\[Paper\]](#)

RESEARCH EXPERIENCE

Research Assistant, University of Massachusetts, Amherst

Sept 2023– Present

🔗: Human-Computer Interaction, Accessibility, Information Visualization, Crowdsourcing

- Create a visual analytics tool to find the effects of music in data videos to augment the content creation's process under the supervision of [Dr. Narges Mahyar](#).
- Conduct quantitative and qualitative analyses to investigate the attitudinal impact of music in Data Video (Work-In-Progress)

Research Assistant, The University of Fiji

Oct 2021 – Sept 2022

🔗: Decentralized Finance (DeFi), Blockchain, Supply Chain Management

- We introduce a **novel framework** based on hyperledger fabric platform to improve **drug traceability** system by preventing counterfeit pharmaceuticals under the supervision of [Dr. A B M Shawkat Ali](#).
- Led the experiment by designing the **network topology** of main framework, implementing smart contract functions and evaluating the model through **security and governance features**.

Undergraduate Research Assistant, [JU Data Mining Group](#)

Dec 2019 – June 2022

🔗: Social Network Analysis, Information Retrieval, TwitterRank

- Our key insight is to execute a **temporal activity biased weight model** for tracking most effective influential users in social media under the supervision of [Dr. Musfique Anwar](#).
- Led the experiments by curating datasets of users' activity with neighbor associations, calculating **topical degree** and and evaluating the process through **correlation** and **performance mapping**.

SELECTED PROJECTS

AdaWill: Depression Prediction using Machine Learning [↗](#) | **Python** Nov 2021

- Develop a prediction model using multiple ML techniques and implement **pearson correlation**, target encoding. Our accuracy is **84.3%**.

SuperWomen: A Smart Mobile Application for woman security [↗](#) | **ChatFuel, Java** May 2020

- Developed a **dynamic** peer to peer data sharing platform for woman safety.
- Designed multi-user authentication system and automated **speech recognition** using **PocketSphinx**

ReMen: Web-based application for food ordering system [↗](#) | **C++, System Design** Aug 2019

- Developed a smart food ordering app using **OOP** and **software design principles** to ensure fast connectivity, data management, and modular system design.

SELECTED AWARDS & ACHIEVEMENTS

Google CSRMP Scholar'23: Awarded **Google CS Research Mentorship** for 12 weeks under the supervision of [Dr. Siyan Zhao](#).

NST Fellowship'22 Awarded with **\$600** (top 0.1%) to facilitate the B.SC. dissertation.

JU Dean's List: Awarded **scholarships** for academic excellence among 420 students from session 2017 to 2022.

NSDA' 21: National Finalist at Cloud Computing Catagory in Bangabandhu National Skills Competition.

GWOC'21: Ranked top **10%** out of 8000+ participants in **Machine learning & Data Science catagories** of GirlScript Winter of Contributing 2021.

Ada Lovelace'21: Ranked **6th** place in Ada Lovelace Datathon 2021 hosted by **HerWill**.

Messaging'20: Participated at the **Facebook Hackathon: Messaging 2020**.

ISWI'19: Awarded **fellowship** among 2000+ candidates from 75 countries to attend **International Student Week Ilmenau**, Germany.

IWCVIS' 19: **Best poster paper** award in International Workshop on Computer Vision and Intelligent Systems.

Hult Prize'19: Ranked **10th** place out of 50 teams in Hult Prize in Jahanagirnagar University.

NGPC'18: Ranked top **9%** out of 105+ teams in National Girls Programming Contest 2018.

TECHNICAL SKILLS

Languages: Python, C, C++, Solidity, SQL, HTML

Machine Learning: PyTorch, Keras, OpenCV, NLTK

Developer Tools: VS Code, Android Studio, LATEX, PyCharm, Jupyter Notebook, Spyder, Weka, Galago

Frameworks: Linux, AWS cloud shell

Version Control: Git, Github

TEACHING AND SERVICES

Lecturer | **Daffodil International University** [↗](#) Dec'2022 – June'23

- Instructed a cohort of 280 students in Numerical Analysis and Software Requirement Analysis, ensuring comprehensive understanding of key concepts.

Mentor | **CARE PhD Applicant Support** [↗](#) Oct'2023 – Present

- Review marginalized people's graduate school application materials (CV, Sop) with **one to one mentorship** program

Reviewer | **Publons** [↗](#) July 2022 – Present

- Peer Reviewed one paper at **Social Network Analysis and Mining** (Springer Nature Open Access Journal)

Assistant Program Secretary | **JU Computer Club** [↗](#) July 2018 – July 2019

- Directed event operations, media engagements of the organization.
- Established the connection between the management team and leading fundraising organizations and managed **\$800** funding from three organizations.