





# SARMISTHA SARNA GOMASTA

Amherst, Massachusetts

✉ [sgomasta@umass.edu](mailto:sgomasta@umass.edu)  [sarmistha-sarna](https://www.linkedin.com/in/sarmistha-sarna)  [ron352](https://github.com/ron352)  [Sarmistha-Gomasta](https://www.researchgate.net/profile/Sarmistha-Gomasta)  [ron352](https://orcid.org/ron352)

## RESEARCH INTEREST

---

Multimodal data visualization, Human-computer interaction, Ubiquitous Computing and Privacy-preserving machine learning

## EDUCATIONAL QUALIFICATION

---

University of Massachusetts, Amherst

Sep 2023 – Sep 2029

MS/PhD in Computer Science

CGPA: 4.0/4.0

Courses: Research Methods in Empirical Computer Science, Information Retrieval, and Advanced Natural

Language Processing

Jahangirnagar University

Mar 2017 – June 2022

B.Sc. in Computer Science and Engineering

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

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

## PUBLICATIONS & PREPRINTS

---

- Investigating How Music Affects Persuasion, Engagement, and Emotion in Data Videos. **Sarmistha Sarna Gomasta** et al. (Submitted in IEEE VIS'24).
- 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]
- Leveraging Translation For Optimal Recall: Tailoring LLM Personalization With User Profiles - Karthik Ravichandran\*, **Sarmistha Sarna Gomasta**\*. [Arxiv Preprint]
- A Framework on Deep Learning-Based Indoor Child Exploitation Alert System. Shinthi Tasnim, **Sarmistha Sarna Gomasta**, Natasha Tanzila, Md. Ezharul Islam. Published in IEEE International Symposium on Technology and Society (**IEEE ISTAS - 2020**). [Short Paper]

## RESEARCH EXPERIENCE

---

Algorithm Development Engineer Intern, STMicroelectronics, CA

June 2024– August'24

🔗: Ubiquitous Computing, Distributed Systems, Immersive Visualization

- Design and implementation of algorithms, data collection experiments, integration and verification on embedded platforms.
- Contribute to the development of novel algorithms for Augmented reality data visualization and cross interactions.

Research Assistant, University of Massachusetts, Amherst

Sept 2023– Present

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

- Conduct quantitative and qualitative analyses to investigate the attitudinal impact of sound 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.
- 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

- Execute a **temporal activity biased weight model** for ranking effective influential users in social media.
- Led the experiments by curating datasets of users' activity with neighbor associations, calculating **topical degree** and evaluating the process through **correlation** and **performance mapping**.

## 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 Category in Bangabandhu National Skills Competition.

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

**Ada Lovelace'21:** Ranked **6<sup>th</sup>** 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 **10<sup>th</sup>** 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.

## SELECTED PROJECTS

---

### Human Activity Recognition Models [↗](#) | Python

Dec'24

- Balancing differentiability and generalizability in the feature selection process and introducing lightweight classifiers. Our accuracy is **91.4%**.

### Leveraging Translation for optimal Recall [↗](#) | Python

Dec'24

- Proposed integrating data augmentation approaches to query expansion to help address term mismatch problems through enhanced representation of the searcher's context.

### 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.

## 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

**HCI Research Skills:** Interviews, Surveys, Data Analysis, Statistics, Usability Testing, A/B Testing, Data Visualization