

# SARMISTHA SARNA GOMASTA

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## EDUCATIONAL QUALIFICATION

### Jahangirnagar University

July 2022 – Present

M.Sc. in Computer Science and Engineering

Expected Completion Date - May 2023

### 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. *\*Under Review*
- AlgoCert: Adopt Non-transferable NFT for the Issuance and Verification of Educational Certificates using Algorand Blockchain. Tahlil Tahlil, **Sarmistha Sarna Gomasta**. Accepted in the 9th proceedings of the Asia-Pacific Conference on Computer Science and Data Engineering, Gold Coast, Australia (**CSDE-2022**).
- 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**. (Impact factor: 5.019) [[Paper](#)] [[Code](#)]
- Attribute-driven Topical Influential Users Detection in Online Social Network. Aditi Dhali, **Sarmistha Sarna Gomasta**, Md. Musfique Anwar. Published in the proceedings of the Asia-Pacific Conference on Computer Science and Data Engineering, Gold Coast, Australia (**CSDE-2020**). [[Paper](#)]
- Identification of Query-Oriented Influential Users in Online Social Platform. Aditi Dhali, **Sarmistha Sarna Gomasta**, Sudepto Mohanta, Md. Musfique Anwar. Published in IEEE Region 10 Symposium (**TENSYMP - 2020**), Dhaka, Bangladesh. [[Paper](#)]
- 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](#)] [[Presentation](#)]
- Detecting Query-Oriented Influential Users from Mining Social Network. **Sarmistha Sarna Gomasta**, Aditi Dhali, Sudepto Mohanta, Md. Musfique Anwar. Presented in International Workshop on Computer Vision and Intelligent Systems (**IWCVIS - 2019**), Dhaka, Bangladesh. [[Best Poster Paper](#)].

## RESEARCH EXPERIENCE

### Research Assistant, The University of Fiji

Oct 2021 – Present

🔗: 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**.

### Research Assistant

April 2022– Present

🔗: Non-transferable NFT, Algorand Blockchain, Stateful Smart Contract

- We, for the first time, demonstrate a **comprehensive credential verification** system incorporating **non transferable NFT**, self-sovereign identity (SSI), and decentralized identifier (DID) under the supervision of [Tahlil Tahlil](#), working in [Tero Labs, USA](#).
- Organized the ground work and compiled smart contract code to assembly code for **security analysis**.

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

Dec 2019 – June 2022

🔗: Social Network Analysis, TwitterRank, Data Mining

- 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

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**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

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**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 in the **Facebook Hackathon: Messaging 2020**.

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

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

**Robotics Competition'19: Runner-Up** at the Intra University Line Follower Robotics Competition 2019.

**Hult Prize'19:** Ranked **10<sup>th</sup>** place out of 50 teams in Hult Prize at Jahanagirnagar University.

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

**Merit Scholarships:** Government Board **Merit scholarships** for outstanding results in both Higher Secondary Certificate (2016) and Secondary School Certificate (2014).

## TECHNICAL SKILLS

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**Languages:** Python, Java, C, C++, Matlab, Solidity, SQL, HTML

**Machine Learning:** PyTorch, Keras, OpenCV, TensorFlow, NLTK

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

**Frameworks:** Linux, Mongo, Bootstrap, Arduino, Spring Boot, AWS cloud shell

**Version Control:** Git, Github

## EXPERIENCES

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

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

**Lecturer** | **Daffodil International University** [↗](#) **Jan 2023– Present**

- Conducting Courses : Software Architecture, Numerical Analysis and Software Requirement Analysis.
- Co-leading the **Cyber Security Center** consisting of 20 people.