

MIRZA KAMRUL BASHAR SHUHAN

+880 1621416121 | shuhan.mirza@gmail.com | [linkedin.com/in/shuhanmirza](https://www.linkedin.com/in/shuhanmirza) | github.com/shuhanmirza
shuhanmirza.com | shuhanmirza.medium.com | [Google Scholar](https://scholar.google.com/citations?user=shuhanmirza) | [ResearchGate](https://www.researchgate.net/profile/shuhanmirza)

RESEARCH INTERESTS

Distributed Systems, Security & Privacy, Cryptography, Blockchain

EDUCATION

BSc. in Computer Science and Engineering

March 2019

Shahjalal University of Science and Technology (SUST)

CGPA: 3.83/4.00 (Major CGPA 3.93/4.00) (Class Rank 3rd out of 55)

Co-curricular Activities: Hackathons, Competitive Robotics

Thesis: “Decentralised identity federations using blockchain” under supervision of Dr. Md Sadek Ferdous. [J1.]

PUBLICATIONS

Journal Publications

- J1. **MKB Shuhan**, SM Hasnayeem, TK Das, MN Sakib and MS Ferdous, “Decentralised identity federations using blockchain,” International Journal of Information Security (2024), doi.org/10.1007/s10207-024-00864-6

Conference Publications

- C1. **MKB Shuhan**, T Islam, E A Shuvo, F H Bappy, K Hasan and C Caicedo, “Quarks: A Secure and Decentralized Blockchain-Based Messaging Network,” 2023 IEEE 10th International Conference on Cyber Security and Cloud Computing (CSCloud)/2023 IEEE 9th International Conference on Edge Computing and Scalable Cloud (EdgeCom), Xiangtan, Hunan, China, 2023, pp. 268-274, [doi: 10.1109/CSCloud-EdgeCom58631.2023.00053](https://doi.org/10.1109/CSCloud-EdgeCom58631.2023.00053)
- C2. **MKB Shuhan** R Dey, S Saha, MSU Anjum, TS Zaman, “A Stylometric Dataset for Bengali Poems,” In 2022 6th International Conference on Natural Language Processing and Information Retrieval (NLPPIR 2022), December 16–18, 2022, Bangkok, Thailand. ACM, New York, NY, USA, 5 pages. [doi: 10.1145/3582768.3582788](https://doi.org/10.1145/3582768.3582788)
- C3. I Alom, RM Eshita, AI Harun, MS Ferdous, **MKB Shuhan**, MJM Chowdhury, MS Rahman, “Dynamic Management of Identity Federations using Blockchain,” 2021 IEEE International Conference on Blockchain and Cryptocurrency (ICBC), Sydney, Australia, 2021, pp. 1-9, [doi: 10.1109/ICBC51069.2021.9461128](https://doi.org/10.1109/ICBC51069.2021.9461128).
- C4. US Jannat, SM Hasnayeem, **MKB Shuhan** and MS Ferdous, “Analysis and Detection of Malware in Android Applications Using Machine Learning,” 2019 IEEE International Conference on Electrical, Computer and Communication Engineering (ECCE), Cox’sBazar, Bangladesh, 2019, pp. 1-7, [doi: 10.1109/ECACE.2019.8679493](https://doi.org/10.1109/ECACE.2019.8679493).

Ongoing Research

- O1. “Tau: A Blockchain-based Invoice Network”

PROFESSIONAL EXPERIENCE

bKash Limited

Dhaka, Bangladesh

Assistant Lead Software Engineer, Research & Engineering Dept.

May 2023 – Present

- Involved in all phases of agile including the requirements analysis, architecture design, development, testing, deployment, and ongoing support for the bKash customer app which has a user base of over 70 million.
- Coordinated the development of multiple features by managing and mentoring junior engineers, ensuring timely delivery by efficient teamwork.
- Led the implementation of the VPN detection service, substituting a 50k dollars/year third-party service.
- Tech Skills: Java, Golang, Spring Boot, AWS, Docker, Redis*
- Soft Skills: Management, System Design, Timely Delivery, Prioritization*

Senior Software Engineer, Research & Engineering Dept.

April 2021 – April 2023

- Enhanced PIN security by redesigning encryption methods and implementing a Vue component and Spring Boot API. The solution was later integrated into 3 additional products, optimizing their security measures.
- Resolved high-severity security bugs in credential encryption and API authorization through comprehensive code reviews, ensuring robust protection of sensitive data.

- Formalized Data Pipe-Lining which is used by 40+ micro-services by developing a library using Spring AOP.
- *Tech Skills: Java, Golang, Javascript, Python, Spring Boot, Vue, AWS, Docker, Redis*
- *Soft Skills: System Design, Timely Delivery*

Progoti Systems Limited

Dhaka, Bangladesh

Software Engineer

September 2019 – March 2021

- Implemented key features such as merchant sign-up, login, PIN setup, PIN management, user referral, SureCash wallet integration, notification inbox, and settings within the Android app and Django API of TallyKhata.
- Streamlined the testing process by incorporating Firebase Test Lab into the software development life-cycle (SDLC), resulting in substantial time and effort savings.
- *Tech Skills: Java, Python, Android, Django, PostgreSQL, Docker, Redis*

RESEARCH EXPERIENCE

Grönska Stadsodling

Sweden

Consultant

Oct 2020 – Feb 2021

- Contributed to system design and interfacing their EU funded Automated Indoor Vertical Farming system named GrowOff.

Cryptic Consultancy Limited

United Kingdom

Research Engineer

Mar 2020 – Mar 2021

- Spearheaded the research and development of the MVP version of an enterprise blockchain solution designed for a financial institution using Hyperledger Fabric.

Blockchain and Security Lab (SUBSeL), Shahjalal University of Science & Technology

Sylhet, Bangladesh

Research Assistant

Mar 2019 – Feb 2020

- Contributed to the research and development of a university-funded project focused on Blockchain and Identity management. [C3.]
- Single-handedly configured and deployed the Infrastructure as a Service (IaaS) in the lab's server.

SERVICE

Conference Review

- 1st & 2nd IEEE International Workshop on Cryptocurrency Exchanges (CryptoEx) 2023 & 2024
- 6th International Conference on Blockchain Technology and Applications (ICBTA) 2023
- 4th, 5th & 6th International Congress on Blockchain and Applications (BLOCKCHAIN), 2022, 2023 & 2024

Journal Review

- International Journal of Network Management (IJNM)

Distinguished Juror

- Blockchain Olympiad Bangladesh (BCOLBD) 2023
- Robot Olympiad Bangladesh (BdRO) 2020, 2021, 2022 & 2023

SELECTED OPEN SOURCE PROJECTS

Quarks | *Go, JavaScript*

github.com/shuhanmirza/quarks-network

- Developed this Proof-of-Concept using Hyperledger Fabric for our research paper titled "Quarks: Secure and Decentralized Blockchain-Based Instant Messaging Network". [C1.]

SimplePdfGenAPI | *Java, SpringBoot*

github.com/shuhanmirza/SimplePdfGenAPI

- PDF Generator REST Service that can be deployed out of the box. It can generate PDFs from LaTeX and HTML Templates.

Surelink | *Go, Javascript* | surel.in

github.com/shuhanmirza/surelink

- Safe URL shortening service with transparency in mind. It shows a link preview before forwarding.
- Developed backend using Gin Gonic and frontend using VueJs. Utilized PostgreSQL and Redis.

SUSTCast | *Java, Python* | App

github.com/sustcast/sustcast

- Fully automated online radio platform servicing over 2000 students of SUST.
- Developed mobile application using Android Java and backend service using Python3. Utilized Firebase real-time database for storage and IceCast for broadcasting audio.

Cryptography online tool | *JavaScript* | Web

github.com/shuhanmirza/cryptography-online-tool

- Website for trying out different cryptographic algorithms.
- Developed frontend using VueJs.

More on my GitHub github.com/shuhanmirza

SELECTED AWARDS

International

- *Award of Merit* in the International Blockchain Olympiad 2021 out of 600+ teams worldwide. [C1.]
- *Award of Merit* in the International Blockchain Olympiad 2020 out of 350+ teams worldwide. [O1.]
- *Finalist* in the International Autonomous Robotics Challenge 2016 organized by IIT Kanpur.

Professional

- *Travel Grant* for presenting the published research paper sponsored by bKash limited at the NLPiR 2022. [C2.]
- *bKash STAR Award*, 2021 for time-to-market delivery of bKash Business Dashboard.

National

- *Best Prototype Award* in the Blockchain Olympiad Bangladesh 2021. [C1.]
- *Champion* in the ICT fest Hackathon 2017 organized by the Islamic University of Technology.
- *Champion* in the Autonomous Sumo Robot Contest 2016 organized by the North South University.
- *Bronze* in the National Informatics Olympiad 2013.
- *Champion* in the National Science Olympiad 2012.

Academic

- *Shahjalal University Talent Scholarship*
- *Runners Up* in the Scientific Poster Symposium for senior year students 2018 [J1.]

SELECTED MEDIA CONVERAGE

- [HelloFuture Orange] Quarks: decentralized and blockchain-secured instant messaging [C1.]
- [TechXplore] A decentralized, blockchain-based messaging network for safer communications [C1.]

SELECTED LEADERSHIP EXPERIENCE

SUSTCast - Online Radio Station of Shahjalal University of Science & Technology

Founding Team Lead

2018 - 2019

- Initiated the project to make a completely automated internet radio service.

RoboSUST - Robotics club of Shahjalal University of Science & Technology

General Secretary

2017 - 2018

- Initiated the Project: *AutoMama (Autonomous Shuttle)* which got the Shahjalal University Grant of 150K BDT (\$1400).
- Spearheaded several workshops, tech sessions, and inter-university competitions to foster the skill development of the students.

IEEE International Conference on Bangla Speech and Language Processing (ICBSLP)

Lead Organizer

2018

- Oversaw the preparation of the budget and procurement to prepare the venue and refreshments.
- Led the volunteer team to prepare and manage the conference venue attended by over 600 scholars.

CSE Carnival - Annual inter-collegiate technical festival, Shahjalal University of Science & Technology

Lead Organizer

2017

- Prepared the problem statement of the Sumo Robot Competition.
- Spearheaded the preparation of the budget and procurement for the Sumo Robot Competition.
- Led the volunteer team to organize the Robotics Competition which was participated by 40+ teams nationwide.

SELECTED CERTIFICATIONS

- Certified Blockchain Architect™ | Issued by Blockchain Council
- Certified Payment Industry Security Implementer - Developer (CPISI-D) | Issued by SISA

TECHNICAL SKILLS

Languages: Java, Go, Python, JavaScript, Shell

Frameworks: Spring Boot, Gin Gonic, Vue, Django, Fastapi, Android

Databases: DynamoDB, PostgreSQL, SQLite, Firebase, Redis

Cloud: AWS (EC2, Lambda, S3, SQS, KMS, Cognito, Kinesis), Hetzner

Blockchain: Hyperledger Fabric, Hyperledger Explorer

IoT: Atmel AVR, Arduino, NodeMCU, Raspberry Pi

OS: Ubuntu, Lubuntu, CentOS, Raspbian

Tools & Libraries: Docker, Git, Selenium, SimpleSAMLpHp, JMeter, Zimlet, JQuery

REFERENCES

Dr. Md Sadek Ferdous

Associate Professor
Department of Computer Science and Engineering
Brac University
Dhaka, Bangladesh
+880 1760253640
sadek.ferdous@bracu.ac.bd

Dr. Farida Chowdhury

Professor
Department of Computer Science and Engineering
Brac University
Dhaka, Bangladesh
+880 1743018917
farida.chowdhury@bracu.ac.bd

Nabil Ahmed Lipon

Vice President
Research & Engineering Dept.
bKash Limited
Dhaka, Bangladesh
+880 1711484383
nabil.lipon@bkash.com