

SAGAR KARMOKER

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Education

East West University

2025 – Present

Master of Science in Computer Science and Engineering; Cum. GPA: 4.0 / 4.0

Dhaka, Bangladesh

East West University

2020 – 2024

Bachelor of Science in Computer Science and Engineering; Cum. GPA: 3.86 / 4.0

Dhaka, Bangladesh

Relevant Coursework

- OOP (JAVA)
- Data Structures
- Algorithms
- Software Engineering

- Software Testing and Quality Assurance
- Database Management (DBMS)

- Artificial Intelligence
- Machine Learning
- System Analysis and Design

- Computer Architecture
- Mobile Programming (Android)
- Web Programming

Experience

Brac University

September 2025 – Present

Research Assistant (RA) at Dept of CSE

Dhaka, Bangladesh

- Working on research and development in the areas of Self-Sovereign Identity (SSI) and the Metaverse.

AHOM Limited

December 2024 – August 2025

Junior Blockchain Developer

Remote (UK)

- Engineered a scalable Wallet Management System capable of generating and managing EOAs across 101 blockchain networks, streamlining onboarding and integration.
- Built and deployed an automated transaction handler for a centralized exchange, ensuring secure and efficient fund transfers to designated hot wallets.
- Designed and implemented a real-time Oracle Price Aggregator to identify optimal swap routes across multiple DeFi protocols, improving transaction efficiency and cost savings.
- Created detailed instructional materials and technical documentation to support internal training and enhance comprehension of complex blockchain workflows.

East West University

October 2023 – June 2025

Teaching Assistant (Previously UTA and then GTA)

Dhaka, Bangladesh

- Assisted in teaching undergraduate courses in Computer Science, including Data Structures, Object Oriented Programming (OOP), Software Engineering, AutoCAD and Web Programming.
- Conducted weekly lab sessions and office hours to help students with coursework and assignments.
- Graded exams, quizzes, and assignments, and provided constructive feedback to students.
- Developed supplementary instructional materials to aid students' understanding of complex topics.
- Collaborated with faculty to improve course content and delivery methods.

Projects

TaxShieldBD: A Blockchain-Enabled Secure Taxation System with E-KYC Integration for Bangladesh | React.js, Next.js

- Developed a secure and transparent taxation system using a private blockchain to ensure tamper-proof tax records.
- Implemented E-KYC verification for seamless taxpayer authentication and fraud prevention.
- Built a scalable backend with Java Spring Boot and PostgreSQL for efficient data management and secure transaction handling.
- Designed a modern, accessible UI using ShadCN and Tailwind CSS, enhancing the frontend experience with React.js and Next.js.

TraceChainBD Supply Chain Management System | React, Blockchain, Solidity, Ethers, Tailwind CSS, Chakra UI 2024

- Developed a supply chain management system using Blockchain with features for tracking shipments, managing inventory, and ensuring product authenticity.
- Implemented a modern UI using Tailwind CSS and Chakra UI, and optimized frontend performance with Vite.
- Integrated backend services with Node.js for real-time data processing and secure transaction management.

Product Recommendation System (ML Based Project) | Python, HTML, Tailwind CSS, Flask, Google Colab 2022

- Built an ML-based product recommendation system using collaborative and content-based filtering algorithms.
- Developed a Flask web app with a responsive front-end using Tailwind CSS.
- [Demo: GitHub]

Technical Skills

Languages: C, C++, Java, JavaScript, Typescript, HTML/CSS, Tailwind CSS, Solidity (Blockchain), SQL, Kotlin

Developer Tools: VS Code, Git and Github, IntelliJ IDEA, Google Cloud Platform, Android Studio, Material UI, Firebase, Google Colab

Technologies/Frameworks: Spring Boot and Security, ReactJs, Chakra UI, ShadCN, Tailwind CSS, MUI, NodeJs, Linux, GitHub, Ethereum(EVM)

Awards and Achievements

The 6th Bangladesh Blockchain Olympiad Bronze Award Winner

2025

SSI-Based Universal Wallet with eKYC Integration

Dhaka, Bangladesh

- Developed a Self-Sovereign Identity (SSI) based universal wallet integrating secure and privacy-preserving eKYC mechanisms.
- Won the Bronze Award at the 6th Bangladesh Blockchain Olympiad for innovation and technical excellence.
- Nominated to represent Bangladesh at the International Blockchain Olympiad held in Hong Kong.

Merit Scholarship

2023 – 2024

East West University

Dhaka, Bangladesh

- Maintained a CGPA of 3.95 or higher for multiple semesters.
- Tuition fee waiver for one academic year.

Dean's List

2023 – 2024

East West University

Dhaka, Bangladesh

- Maintained a CGPA of 3.95 or higher for multiple semesters.

NASA Space Apps Challenge Finalist

2024

SDGs in Classroom System

Dhaka, Bangladesh

- Led a team to the finals of the NASA Space Apps Challenge with a project focused on enabling SDG in the classroom.

Cisco IoT Hackathon Finalist

2024

IoT and Blockchain-based Supply Chain Management System

Dhaka, Bangladesh

- Led a team to the finals of the Cisco IoT Hackathon with an IoT and blockchain-based supply chain management system.
- Developed and demonstrated a prototype that integrated IoT sensors and blockchain for real-time product tracking and transparency in the supply chain.

Research

Research Projects

East West University

June 2022 – December 2024

Dhaka, Bangladesh

- AuthiFi: An Advanced Blockchain e-KYC Solution with Enhanced Wallet Security Using Shamir's Secret Sharing First Author. Published at International Conference on Computer and Information Technology (ICCIT). DOI: 10.1109/ICCIT64611.2024.11022337.
- Decentralized e-KYC System for Secure Identity Verification in Bangladesh First Author. Published at IEEE International Conference on Blockchain and Distributed Systems Security 2024. DOI: 10.1109/ICBDS61829.2024.10837368.
- TraceChainBD: Securing Supply Chains from Counterfeiting in Bangladesh with Blockchain and IoT Integration First Author. Published at IEEE International Conference on Innovations in Science, Engineering and Technology (ICISET) 2024. DOI: 10.1109/ICISET62123.2024.10940030.
- PassChain: A Blockchain-Based Decentralized Password Manager Co-author. Published at IEEE International Conference on Blockchain and Distributed Systems Security 2024. DOI: 10.1109/ICBDS61829.2024.10837098.
- ImportChainBD: Blockchain Solutions for Transparent and Accountable Imported Cosmetic Products Co-author. Published at IEEE International Conference on Blockchain and Distributed Systems Security 2024. DOI: 10.1109/ICBDS61829.2024.10837434.
- SafeMediChain: Enhancing Blockchain Healthcare Networks with Machine Learning-Based Fraud Detection Mechanisms Co-author. To be published at International Conference on Data Mining and Information Security 2024.