

# SAIMUM ISLAM

Khulna, Bangladesh

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## Experience

### Jukto Digital

Senior Software Engineer

Oct. 2021 – Present

Khulna, Bangladesh

- Led the end-to-end development of a Learning Management System (LMS) focused on automating and scaling core academic functions such as student admission, personalized assessments, examinations, attendance tracking, certificate generation, and timeline-based study planning—laying a practical foundation for research into adaptive and AI-integrated education systems.
- Developed modular assessment and reporting tools that enabled dynamic form generation, customizable evaluation methods, and automated progress tracking—directly contributing to more personalized and scalable learning experiences, aligning with research on adaptive assessments in AI-supported education.
- Enhanced learning analytics and system reliability by integrating update tracking, soft delete functionality, and structured data recovery mechanisms—ensuring traceability and integrity of academic records, essential for mapping educational materials and assessment in the AI era.

### Startup, Softspace AB

Junior Software Engineer

Jun. 2020 – Sept. 2021

Malmö, Sweden; Remote

- Contributed to full-stack development of a social networking platform with Facebook-like features, working on both frontend interfaces and backend logic. Participated in Agile sprint planning, requirements analysis, and technical discussions to support efficient development and faster feature delivery.
- Improved system security and performance by implementing two-step verification and a custom role-based access control (RBAC) mechanism. Assisted in troubleshooting production issues through source code analysis, network trace reviews, and configuration debugging—resulting in a 15% boost in performance.

### EDGE-KUCSE Digital Skills Training

Industrial Expert

Apr. 2025 – July 2025

Khulna, Bangladesh; Seasonal

- Served as an Industrial Expert Trainer for the Enhancing Digital Government & Economy (EDGE) Project, conducting hands-on training on Python Programming and Basic Data Science for three batches of participants, focusing on real-world problem-solving, data handling, and predictive modeling techniques.
- Designed and delivered workshop-based sessions combining theory, presentations, and project-based learning—guiding participants with little to no programming background through practical coding exercises, data science fundamentals, and collaborative project work.

## Publications

### KULemma Towards a Comprehensive Bangla Lemmatizer | ICEEICT

May 3, 2024

- Co-authored and published a paper titled "KULemma: Towards a Comprehensive Bangla Lemmatizer" at the 2024 6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT), presenting a high-accuracy (96.90%) Bangla lemmatization system.
- Developed a large-scale linguistic dataset comprising over 297,000 unique words, 50,000 synonyms, and 10,000 antonyms. Implemented advanced algorithms such as Trie, LSSRA, and Levenshtein Distance to support morphological analysis and rule-based lemmatization.
- Integrated POS tagging and Bangla-specific stemming rules to enhance the lemmatization accuracy, contributing a valuable NLP resource for Bangla language processing and downstream applications such as search, translation, and text normalization.

### BNNNet: Towards A Comprehensive Bangla WordNet | ICCIT

Apr. 4, 2021

- Co-authored the paper "BNNNet: Towards a Bangla WordNet", presented at the 2020 23rd International Conference on Computer and Information Technology (ICCIT), addressing the scarcity of Bangla linguistic resources by constructing a bilingual English-Bangla WordNet and mapping it to the Princeton WordNet.
- Compiled and integrated a large-scale bilingual lexical database, including 247,748 English-to-Bangla and 205,344 Bangla-to-English word pairs. The system includes over 75,000 Bangla synonyms and 66,000 English synonyms, supporting semantic analysis and word sense disambiguation in Bangla NLP.
- Successfully mapped 111,095 words ( 75%) from the Princeton WordNet and provided 102,047 Bangla definitions ( 86%) aligned with 117,791 English definitions. Developed RESTful APIs and user interfaces for public access, and implemented an English-Bangla semantic similarity checker using the BNNNet framework.

## Education

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### **Khulna University**

*Master of Science in Computer Science & Engineering* | CGPA: 3.67

**Sep. 2017 – May 2021**

*Khulna, Bangladesh*

- Completed both BSc and MSc in Engineering from Khulna University, specializing in Computer Science and Engineering, where I built a strong foundation in core programming, system design, and machine learning, alongside a growing passion for research and innovation.
- Conducted thesis research at both undergraduate and postgraduate levels, with my MSc thesis focused on Natural Language Processing (NLP), contributing to advanced linguistic modeling and the development of Bangla language tools.
- Demonstrated strong problem-solving skills by securing top positions in national and inter-university programming contests, including ACM-ICPC, NCPC, Code-Samurai, and Khulna University CSE Fest, while completing advanced coursework in AI, Pattern Recognition, Probability & Statistics, and Petri Net System Modeling.

## Personal Projects

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### **DevStart** | *Koa.js, React Native, Typescript, Mongodb.*

**Feb. 2025 – Present**

- Developed a comprehensive career-oriented mobile application designed to guide fresher from foundational learning to job readiness through structured learning paths, topic-specific tutorial links, curated question banks, interactive quizzes, career roadmaps, and quick-access cheat sheets—enabling beginners to kickstart their careers in tech.
- Integrated a curated job resources module by listing trusted external job platforms, enabling users to easily discover relevant tech opportunities and bridge the gap between learning and employment within the same application.

### **RetailFlow** | *React.js, Django Rest Framework, Typescript, Mysql.*

**Mar. 2025 – Present**

- Built a full-featured web-based shop management system enabling users to manage products, set pricing, create invoices, register customers, and track stock levels across multiple outlets through a clean and intuitive interface.
- Implemented dynamic invoice generation with PDF export, customer and invoice reporting, and real-time stock updates, allowing seamless inventory control and comprehensive business reporting for small to medium-sized retailers.

### **Mosque Finder** | *Koa.js, React Native, Typescript, Mongodb.*

**Dec. 2024 – Apr. 2025**

- Developed a comprehensive Islamic utility app (Mosque Finder) that enables users to locate nearby mosques, view accurate prayer times, determine Qibla direction, and access a Hijri calendar, Quran recitations, Hadith, and a Zakat calculator—offering an all-in-one spiritual resource.
- Implemented advanced geolocation features, including reverse geocoding and nearest mosque detection, to ensure location accuracy and enhance user experience across diverse regions. Integrated multiple APIs to deliver religious data in real time within a seamless and responsive interface.

### **BRTA Guide** | *Koa.js, React Native, Typescript, Mongodb.*

**Oct. 2024 – Dec. 2024**

- Designed and developed a mobile application (BRTA Guide) to assist users in Bangladesh with driving license preparation, renewals, and vehicle registration. Built the frontend using React Native and implemented a backend with Koa and MongoDB, ensuring a smooth and responsive user experience.
- Managed the entire development lifecycle, including server setup and deployment with Nginx. Overcame significant challenges in sourcing and structuring accurate government-related data, which was critical to delivering reliable and user-focused functionality.

## Technical Skills

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**Languages:** Python, JavaScript, Typescript, C, Java, HTML, CSS, SQL

**Libraries/Frameworks:** Reactjs, React Native, Django Rest Framework, Koa.js, Express.js

**Databases:** MySQL, MongoDB, PostgreSQL

**Packages:** NumPy, Pandas, XGBoost, Seaborn, Scikit-Learn, SpaCy, TextBlob, NLTK etc.

**Tools:** Overleaf, VS Code, PyCharm, Docker, Git

## Extracurricular

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### **President**

**Jan. 2019 – Jan. 2020**

#### *Cluster*

*Khulna University*

- Collaborated with a motivated team to organize CSE Fest, featuring inter-university programming contests, hackathons, project exhibitions, and cultural events, creating a dynamic platform for student engagement and technical growth.
- Helped coordinate seminars and workshops on emerging technologies, fostering teamwork, innovation, and a culture of continuous learning within the student community.

### **Tour Convenor**

**Feb. 2019**

#### *Department Tour*

*Khulna University*

- Organized and managed all logistics for a final-year tour of 80 students to Cox's Bazar and Saint Martin, including transport, accommodation, and meals, ensuring a smooth and enjoyable experience.
- Collaborated with a team to coordinate planning and execution, promoting teamwork and creating a memorable trip for all participants.