

Md. Mahfujul Karim Sheikh

Software Engineer

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SUMMARY

Software Engineer with extensive experience in production mobile application development (Flutter, Dart) and modern full-stack web engineering. Proficient in building high-performance cross-platform mobile apps, seamless REST API integrations, and scalable cloud backends with Supabase and Firebase. Strong background in full-stack web architectures (Next.js, Node.js, Python), clean architecture, and applied AI systems. Passionate about shipping robust, maintainable, user-centric software.

TECHNICAL SKILLS

Mobile Development: Flutter, Dart, State Management (GetX, Provider), REST API Integration, Clean Architecture
Frontend & Web: Next.js, React.js, Tailwind CSS, TypeScript, JavaScript (ES6+), HTML5, CSS3, Redux
Backend & Cloud: Node.js, Express.js, Python (FastAPI, Flask), Supabase, Firebase, RESTful APIs, JWT Auth
AI, ML & Vision: PyTorch, TensorFlow, OpenCV, LangChain, Ultralytics YOLO, Hugging Face, ModelScope, Kaggle, Colab
Databases: PostgreSQL, MongoDB, MySQL, SQLite, Redis
Tools & Platforms: Git, GitHub, Docker, Postman, Linux CLI, CI/CD (GitHub Actions)

EXPERIENCE

Appstick | [Showcase: github.com/mahfuj735/AppStick] Khulna, Bangladesh
June 2026 – Present

Junior Software Engineer

- Build and maintain production mobile applications (GreenCart, VincyUber, VincyDriver) using Flutter and Dart.
- Integrate REST APIs for real-time data synchronization, user authentication, and backend services.
- Debug issues, profile performance, and conduct testing to maintain release stability.

Mobile Application Development Intern

July 2025 – Aug 2025

- Collaborated with the mobile team to design UI screens and build client modules in Flutter.
- Tested API integrations, resolved UI defects, and logged bugs to improve app quality.

AI Innovation and Research Lab

July 2026 – Present

Research Lab Lead

Khulna, Bangladesh

- Lead hands-on projects exploring Machine Learning, Computer Vision, and autonomous AI agents.
- Work with team members on model training, dataset preparation, and open-source implementations.

YouTube | [📺 <https://www.youtube.com/@MDMAHFUJULKARIMSHEIKH735>]

2024 – Present

Content Creator & Technical Educator

Online

- Produce practical video tutorials teaching Artificial Intelligence, Python, and core Computer Science concepts.
- Mentor learners through step-by-step coding walkthroughs, open discussions, and shared project repositories.

PROJECTS

NUBTK Automation – University Management System

Sep 2025 – Present

Technologies: Flutter, React, Node.js, PostgreSQL

🏠 github.com/mahfuj735/nubtk_automation

- Developed a unified campus ERP featuring a React admin dashboard and Flutter mobile app.
- Implemented student admission workflows, CGPA calculation engine, and Firebase notifications.

AutoAttendance – AI Biometric Facial Recognition System

Apr 2026 – Present

Technologies: Python, PyTorch, ArcFace, OpenCV, Docker

🔗 huggingface.co/spaces/mahfuj735/AutoAttendance

- Engineered a real-time attendance system utilizing 512-dim ArcFace embeddings with 30+ FPS recognition.
- Implemented bio-temporal anti-spoofing liveness protection (blink kinematics, rPPG pulse) containerized in Docker.

PROJECTS (CONTINUED)

Charity Management System <i>Technologies: Flutter, Next.js, NestJS, PostgreSQL</i> 🔗 github.com/mahfuj735/Charity_Management_System - Developed a full-stack platform with a Flutter donor mobile app and a Next.js admin dashboard. - Implemented a NestJS REST API with Prisma ORM, PostgreSQL database, and JWT authentication.	2026
LangChain Multi-Agent Research System <i>Technologies: Python, LangChain, Streamlit, Tavily, Render</i> 🔗 github.com/mahfuj735/LangChain-Multi-Agent-Research-System 🌐 langchain-multi-agent-research-system-xpvc.onrender.com - Built an autonomous 4-agent research pipeline (Searcher, Reader, Writer, Critic) with iterative self-critique scoring. - Integrated Tavily web search, 3-tier resilient web scraping, and Streamlit interactive UI with automated PDF export.	2026
Autonomous Fire-Fighting Robot <i>Technologies: ESP32, ESP8266, ESP32-CAM, C/C++, IoT, ThingSpeak</i> 🔗 github.com/mahfuj735/Fire-Fighter-Robot-Project-Embedded-System- 📺 youtu.be/lfT2HZ3j1w8 - Engineered a distributed multi-microcontroller architecture (ESP32 master, ESP8266 locomotion, ESP32-CAM video streaming) for autonomous hazard response. - Integrated real-time flame and gas detection with ThingSpeak cloud telemetry and relay-actuated water pump suppression.	2026
Medical Chatbot Application <i>Technologies: Python, LangChain, Pinecone, Flask, OpenAI, Docker</i> 🔗 github.com/mahfuj735/Medical-Chatbot-Application - Engineered a medical RAG chatbot using LangChain and Pinecone vector database for semantic literature retrieval. - Developed a Flask REST service containerized with Docker, integrating OpenAI embeddings and prompt pipelines.	2025
Tour & Travel Touch – Tourism Booking Platform <i>Technologies: PHP, MySQL, JavaScript, Bootstrap</i> 🔗 github.com/mahfuj735/TourAndTravelTouch 🌐 tourandtraveltouch.great-site.net - Developed a full-stack travel booking web portal featuring user registration, destination tours, and secure bookings. - Implemented prepared MySQL queries, bcrypt authentication, and CSRF token defenses against web vulnerabilities.	2022

EDUCATION

Northern University of Business and Technology Khulna <i>Bachelor of Science in Computer Science & Engineering</i>	Khulna, Bangladesh Mar 2022 – Aug 2026
Khulna University of Engineering & Technology (IICT) <i>Advanced Diploma in Software Engineering</i>	Khulna, Bangladesh July 2024 – December 2024

RESEARCH PUBLICATIONS

- **Under Review:** *Towards Robust Chemical Document Intelligence: Cross-Paradigm Vision Benchmark, Simulated Document Degradation and Edge Deployment*
- **Ongoing:** *Traffic Light Violation Detection using YOLO26 Model and the SHARP Framework*

TRAINING & CERTIFICATIONS

- **AI for Immersive Technology:** BDSET, Incubation Center, KUET (Oct 2024 – Mar 2026).
- **Python Programming & Data Science:** EDGE Project, Khulna University (Mar 2024 – Oct 2024).
- **Data Analysis Specialization:** AiQuest Intelligence (May 2024 – Aug 2024).
- **Certifications:** Applied Statistics for Data Scientists with R, Business Analytics, SQL Fundamentals.