

MD. KAWSAR AHMED

Software Engineer | Data Science Major

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SUMMARY

I'm a **Language-Agnostic Engineer** with experience across various technologies. My journey began with Frontend Development, and I'm now exploring the fascinating world of backend. Currently, I primarily work with JavaScript, while maintaining proficiency in Python and learning DevOps. A competitive builder with multiple **National Hackathon Championships** and a proven track record of delivering impactful software through leadership roles and community-driven programs.

SKILLS

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| Programming | JavaScript, Python, C/C++, SQL |
| Backend | Node.js (Express.js, Hono.js), Next.js, Django, FastAPI |
| Database & Caching | MongoDB, PostgreSQL, Redis |
| DevOps & Infrastructure | Docker, GitHub Actions, AWS, VPS |
| Tools | Git, GitHub, Docker, Trello, Notion, Render, Clerk, Vercel |
| Observability | OpenTelemetry, Prometheus, Grafana, Loki |
| Messaging & Queues | RabbitMQ, BullMQ |
| Frontend | HTML, CSS, Component Library, Next.js, Axios, TanStack |
| Others | Linux, Prompt Engineering, Product Management, MS Office, Canva, Google Docs, Google Sheet |

WORK EXPERIENCE

Wa-Mac, USA

Software Engineer (Remote)

2025 – Present

- Architected and deployed internal tools and infrastructure improvements, reducing workflow execution time by **40–50%** and improving team productivity across all departments.
- Built a Real Estate Tenant Management System with envelope encryption (KEK/DEK), idempotency mechanisms to eliminate duplicate payments, and fuzzy matching reducing duplicate file uploads by **70%**; implemented support ticket system with Socket.IO + Redis Pub/Sub, video conferencing via LiveKit/WebRTC, and file storage via Google Drive OAuth and MinIO.
- Developed Career Portal Handling 1,200 applications in 3 days with **80% reduction** in manual workflow; currently building a Multi-tenant CRM platform using Turborepo.
- Optimized caching layer with Redis and TanStack Query, improving website loading performance from **1.3s to 0.2–0.4s**; containerized all services with Docker for consistent deployment.
- Engineered custom storage server infrastructure reducing cloud storage costs by **76%** and deployed VPN server for secure internal VPS/server access.
- Led a team of **7 developers** across multiple projects with focus on system design and technical architectural decisions.

HONOURS AND REWARDS

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|--|-------------------------------|
| Champion UAP Innovatex 2025 – National Hackathon | 2025 Dhaka, BD |
| Champion NSU Tech Fest 2025 – National Hackathon | 2025 Dhaka, BD |
| Champion DevFest AI Hackathon by Google Developer Group | 2023 Cumilla, BD |
| 1st Runner Up MIST Inventious 4.1 – National Hackathon | 2025 Dhaka, BD |
| 1st Runner Up CUET CSE FEST Micro-ops National Hackathon | 2026 Chittagong, BD |
| 1st Runner Up Televerse 1.0 API Avengers – National Hackathon | 2025 Chittagong, BD |
| Top 10 Finalists OpenAPI National Hackathon – IUT Tech Fest | 2024 Gazipur, BD |
| Top 9 Finalists SUST CSE Carnival 2024 – National Hackathon | 2024 Sylhet, BD |
| Participant NASA Space Apps Challenge 2025 | 2025 Cumilla, BD |
| Problem Setter (2x) BAIUST CSE FEST 2025 (Spring, Fall) | 2025 Cumilla, BD |

PROJECTS

Multi-tenant SaaS Platform

- Architected a **Turborepo + Bun** monorepo with 6 applications; designed two-system platform separating SaaS Control Plane (tenant lifecycle, auth, billing) from Ecommerce Runtime (multi-tenant storefront).
- Built automated store provisioning pipeline with env config generation, Caddy reverse-proxy management, SSL via ACME/Let's Encrypt, and health checks with real-time status tracking through deployment states.
- Implemented shared-container Next.js storefront serving all merchants via hostname-based tenant resolution with product catalog, checkout, customer auth, order tracking, and theme customization.
- Integrated payment gateway (idempotent checkout), **WhatsApp marketing** (Baileys with per-store session isolation), and **voice marketing (IVR)**.
- Built modular REST API (**Hono + Bun, DDD**) with 35 feature modules; authored 3 production Dockerfiles and Docker Compose orchestrating 7 services with health checks and persistence.
- Managed production deployment via PM2 and GitHub Actions CI/CD.

Offline-First Restaurant POS System

- Architected and developed a production-grade offline-first Point-of-Sale application enabling uninterrupted cashier operations during network outages with zero data loss via IndexedDB local persistence.
- Engineered a dual-database sync pipeline using Dexie.js (client-side write-ahead log) and PostgreSQL (canonical store), with **BullMQ + Redis** background worker ensuring exactly-once order processing via idempotency-key deduplication (24h TTL + DB constraints).
- Integrated **Web Bluetooth API** for direct ESC/POS thermal receipt printer communication with automatic GATT discovery and Unicode-to-raster conversion using Canvas 2D API with Floyd-Steinberg dithering for non-Latin scripts (Bengali, Arabic, CJK).
- Implemented PIN-based RBAC authentication (4 roles) with Redis-backed server sessions and 12-hour offline cache; designed a Zustand cart engine with per-line/order discounts, variants, modifiers, and category-level taxes.
- Built admin dashboard with menu/staff CRUD, table management, analytics via Recharts, dynamic CSS theming, and keyboard-driven command palette; deployed via **Docker Compose + PM2** with separate web/worker processes.

EDUCATION

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| Bangladesh Army International University of Science and Technology (BAIUST), Cumilla | 2022-2026 |
| B.Sc in Computer Science and Engineering (Data Science Major) CGPA: 3.02 | |
| Thesis: "Voice-based Emotion Recognition" | |
| Received the BAIUST National and International Distinguished Student Award (3x) | |
| Cumilla Collectorate School and College, Cumilla | 2021 |
| Higher Secondary Certificate (HSC) Science GPA: 5.00 | |
| Chauddagram HJ Model Pilot Govt High School, Cumilla | 2019 |
| Secondary School Certificate (SSC) Science GPA: 4.50 | |

PERSONAL INFORMATION

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| Father's Name | Md. Abdul Mannan (Late) |
| Date of Birth | 23 March, 2002 |
| Blood Group | A ⁺ |
| NID Number | 7825555407 |
| Religion | Islam |
| Marital Status | Not Married |
| Present Address | Digamboritola, Rajgonj, Cumilla |
| Permanent Address | Fakirhat, Meshtoli Bazar, Chauddagram-3550, Cumilla |

LEADERSHIP

BAIUST Computer Club, BCC

General Secretary (GS)

- Launched Software Intern Program, coaching 102 students to ship 6 Software Modules for the Campus.
- Hosting twice-weekly "Engineering Adda" tech round-tables (avg 40 attendees), boosted club retention.
- Organized a 24-hour hackathon for 51 teams (196 participants). Managed logistics end-to-end, earning a 90% participant NPS.
- Developed the Internal Management System and the Mail server for the Club.

BAIUST CSE FEST 2025

Organizer, Mentor, Problem Setter

- Organized a 24-hour hackathon, IUPC, E-football, Typing Contest, and ICT Quiz for 600+ participants.
- Worked closely with faculty to plan and execute the event end-to-end.
- Problem Setter for the Hackathon Segment; mentored participants throughout.

- Developed strong teamwork skills and an ability to thrive in a fast-paced, dynamic environment.

Stars Intern Program, BAIUST, Sharatnagar, Syedpur 3501

Team Lead

Key projects and outcomes:

- **Bus Tracker:** Real-time tracking for 12 buses with live map and ETA for students and admins.
- **Treasurer Branch Reconciliation:** Automated matching of bank statements and student payments with instant mismatch alerts and ready-to-sign reports.
- **Alumni Portal:** A secure platform for graduate profiles, updates, and networking to enhance alumni engagement.
- **MCP Server:** Central info agent aggregating live academic, finance, and transport data for quicker decision-making.

REFERENCES

Golam Muktader Nayeem

Dean (Acting), Faculty of ECE
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