

TANVEER HOSSAIN MUNIM

Senior Backend Engineer • Applied AI Systems

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SUMMARY

Backend-focused software engineer with 5+ years building data-intensive platforms, APIs, distributed pipelines, and offline applications. Delivered national-scale climate and geospatial systems, led a product team through rapid user growth, and worked remotely with international teams. Strongest in Python, Django/FastAPI, PostgreSQL, distributed data processing, and taking systems from architecture through deployment and support.

TECHNICAL SKILLS

Backend: Python, Django/DRF, FastAPI, Celery, REST, GraphQL, SSE, MQTT, nginx

Data & geospatial: PostgreSQL/PostGIS, Redis, SQL, Airflow, ETL, NetCDF, GDAL, GeoPandas

Frontend & desktop: TypeScript, React, Next.js, Vite, Tailwind CSS, Tauri, Rust

Delivery: Docker, Kubernetes (RKE2), Linux, CI/CD, automated testing, observability

PROFESSIONAL EXPERIENCE

AI GeoLAB Ltd — *Senior Research Engineer*

Apr 2026 – Present

- Built an offline land-record digitisation workstation with Tauri, Rust, React, embedded PostgreSQL, and local FastAPI inference services; packaged it as installable Windows software for field pilots.
- Implemented bulk ingest, role- and location-scoped access, two-person review, approvals, audit history, lineage, search, and durable background jobs for unreliable-connectivity environments.
- Integrated Bengali document extraction and cadastral-map processing behind a model registry and evaluation checks. A held-out application test processed 30 map sheets into 14,536 parcels with no invalid geometries.
- Established automated Rust, TypeScript, Python, and end-to-end tests covering the desktop application and local model services.

RIMES — *Senior Software Engineer*

Jul 2024 – Jul 2026

- Owned the backend, data pipelines, and infrastructure for Timor-Leste's national meteorological platform, ingesting more than 1 TB/day from forecast models, satellites, stations, and marine observations.
- Ran a three-node Airflow cluster with 11 production workflows and roughly 8,000 daily tasks; improved reliability through retries, monitoring, validation, and fail-safe ingestion paths.
- Reduced repeated NetCDF reads from 30 seconds to under 100 milliseconds and observation queries from four seconds to under one second through storage, indexing, and caching changes.
- Designed CAP 1.2 alert services for Timor-Leste and Bangladesh and the real-time data layer behind Bangladesh FFWC's live 15-day flood-forecast system.

Interactive Cares — *Tech Lead*

Jun 2023 – Aug 2024

- Led the engineering team as the learning platform grew from 8,000 to 100,000 users; improved delivery and platform capacity through CDN adoption, load balancing, API consolidation, and CI/CD.
- Grew the team from two to eight engineers, mentored junior developers, and helped the company win a place in Accelerating Asia's 2023 cohort (9 selected from 500+ applicants).

Shipday, Inc. — *Software Engineer, Remote contract*

Sep 2023 – Jan 2024

- Integrated an AI support assistant and developed analytics features for a last-mile delivery platform used by restaurants and delivery teams.

Survey of Bangladesh, Ministry of Defence — *Data Engineer, Part-time*

Sep 2022 – Aug 2023

- Automated validation and transformation of more than 50 GB of monthly geospatial data shared across 43 government departments, removing an estimated 2,400 hours of manual work per year.

Interactive Cares — *Backend Developer*

Jun 2021 – Aug 2022

- Developed core backend services and APIs for the learning platform during its early growth to 8,000 users.

SELECTED ENGINEERING WORK

MIRA AI — *Independent product — Founder & Technical Lead*

Jul 2025 – Present

- Built a multi-channel conversational sales platform with LangGraph, FastAPI, retrieval over 10,000+ products, and Redis-backed conversation state; used by four paying enterprise customers.

WMO wis2downloader — *Open-source contributor*

2025

- Split a monolithic downloader into distributed Celery workers and moved spatial filtering ahead of queueing to avoid irrelevant downloads; the change was merged upstream and used in the Timor-Leste platform.

CAP 1.2 validator — *Co-author, private operational software*

2024 – Present

- Co-developed schema validation, logic checks, and signature verification used in alerting systems for two national meteorological agencies.

EDUCATION & RECOGNITION

Bangladesh University of Engineering and Technology (BUET) — B.Sc. in Computer Science and Engineer- 2018 – 2023
ing, CGPA 3.62/4.00

Bangladesh National Science and Technology Fellowship (2026) • NVIDIA Inception Program (2025)