

Md. Estiak Rahman Ayon

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[Portfolio](#) | [LinkedIn](#) | [GitHub](#)

PROFESSIONAL SUMMARY

Computer Science and Engineering graduate with hands-on experience in Machine Learning, MLOps, and full-stack web development. Experienced in building end-to-end ML pipelines using DVC, MLflow, Docker, GitHub Actions, and AWS, alongside full-stack applications using Laravel, Next.js, TypeScript, FastAPI, Flask, PostgreSQL, and MySQL. Gained industry experience as a Software Engineer Intern at Walton Hi-Tech Industries PLC developing internal applications for manufacturing operations, and conducted undergraduate research in vision-language models for clinical report generation.

TECHNICAL SKILLS

Programming:	Python, TypeScript, JavaScript, PHP, SQL, C++, C#, R
AI & Machine Learning:	PyTorch, TensorFlow, scikit-learn, Vision-Language Models, NLP, Computer Vision, Time-Series Forecasting, pandas, NumPy, Matplotlib
MLOps & Cloud:	MLflow, DVC, DagsHub, Docker, Kubernetes, GitHub Actions (CI/CD), AWS (EC2, S3, ECR)
Backend Development:	Laravel, FastAPI, Flask, Node.js, RESTful APIs
Frontend Development:	Next.js, React.js, Tailwind CSS, Bootstrap, HTML5, CSS3, AJAX
Database:	PostgreSQL, MySQL, MongoDB, Relational Database Design
Tools:	Git, GitHub, GitLab, Linux

PROFESSIONAL EXPERIENCE

Software Engineer Intern

Walton Hi-Tech Industries PLC

Feb 2026 – Apr 2026

Gazipur, Bangladesh

- Built and maintained internal web applications supporting manufacturing operations using PHP, MySQL, JavaScript, and Bootstrap.
- Implemented role-based access control and multi-stage approval workflows to manage department-specific records and operational processes.
- Developed responsive interfaces for applications used directly within manufacturing environments.
- Worked with production-line operators to collect requirements, understand workflow bottlenecks, and demonstrate newly released system features.
- Collaborated with operational teams during development, testing, and deployment of internal software improvements.

PROJECTS

Bangladesh Electricity Demand Forecasting – End-to-End MLOps Project

[GitHub](#) | [Live Demo](#)

- Engineered a production-oriented electricity demand forecasting system using BPDB demand data and Open-Meteo weather data for national and regional predictions.
- Trained and evaluated time-series ML models with MLflow and DagsHub, achieving 4.89% mean CV MAPE and 5.68% holdout MAPE for national forecasting.
- Automated data pipelines and dataset versioning using DVC, GitHub Actions, and scheduled refresh workflows for historical and multi-day forecast updates.
- Deployed the system with FastAPI, Streamlit, Docker, and Render, providing a public dashboard, REST API, historical evaluation, and extended demand forecasts.

ShopSphere – Full-Stack E-Commerce Management System

[GitHub](#)

- Developed a full-stack single-vendor e-commerce system using Laravel, Next.js, TypeScript, and PostgreSQL, featuring a responsive customer storefront (product search, cart, checkout) and a secure admin dashboard for product, inventory, order, payment, delivery, and analytics management.
- Integrated the SSLCommerz sandbox payment gateway with server-side transaction verification and implemented a 30-minute inventory reservation mechanism to prevent overselling.
- Used database transactions, row-level locking, Laravel Sanctum authentication, and background queues to maintain data consistency and automate payment reconciliation and mock CarryBee delivery processing.
- Implemented RESTful APIs with structured validation and error handling, validated across 104 automated backend tests and 415 assertions alongside TypeScript validation and Next.js production builds.

Sentiment Analysis System with Automated MLOps Workflow

[GitHub](#)

- Constructed a reproducible end-to-end ML pipeline using DVC for data ingestion, preprocessing, feature engineering, model training, and evaluation.
- Integrated MLflow with DagsHub for experiment tracking and model registration, with dataset and artifact versioning in AWS S3.
- Containerized the Flask inference application using Docker and configured automated build, testing, and AWS ECR image-push workflows using GitHub Actions.

Vehicle Insurance Prediction – End-to-End MLOps Pipeline

[GitHub](#)

- Developed a modular machine learning pipeline covering MongoDB data ingestion, validation, transformation, model training, and evaluation.
- Built a FastAPI-based model inference service and containerized the application using Docker, integrating AWS S3 and ECR for model and container artifact management.
- Automated application build and deployment to AWS EC2 using GitHub Actions and a self-hosted runner.

Inventory Management System – Barcode-Based Product Tracking

[GitHub](#)

- Created a full-stack inventory system in PHP, MySQL, and Bootstrap tracking products through their full lifecycle via unique barcodes.
- Implemented a five-role access system with stage-specific permissions and automatic stock in/out updates on each scan.
- Designed a normalized nine-table schema with activity logging, supporting stock, summary, and barcode-wise history reports.

RESEARCH EXPERIENCE

BanglaCXR: Vision-Language Pipeline for Bangla Chest X-Ray Report Generation

[GitHub](#)

Undergraduate Thesis – American International University-Bangladesh (AIUB) RAD-DINO, Phi-3.5 Mini, QLoRA, NLLB-200

- Developed a two-stage vision-language pipeline for Bangla chest X-ray report generation using RAD-DINO, Phi-3.5 Mini, and 4-bit QLoRA on a single 8.5 GB GPU.
- Achieved 0.8882 F1-score and 0.9795 recall for abnormality detection on the IU X-Ray dataset.
- Integrated NLLB-200 with a medical glossary for Bangla translation; manuscript in preparation for journal submission.

EDUCATION

Bachelor of Science in Computer Science and Engineering

Sep 2022 – Aug 2026

American International University-Bangladesh (AIUB) | CGPA: 3.54 / 4.00

Dhaka, Bangladesh

Higher Secondary Certificate (Science)

2021

Shafipur Ideal Public School & College | GPA: 5.00 / 5.00

Shafipur, Gazipur

CERTIFICATIONS

- **Data Science Job Simulation** – British Airways via Forage | [View](#)
- **Software Engineering Job Simulation** – Electronic Arts via Forage | [View](#)
- **Power BI for Beginners** – Microsoft via Simplilearn | [View](#)

VOLUNTEERING

BD Clean | [View](#)

Nov 2023

- Participated in grassroots public cleanliness and environmental drives across Gazipur to encourage responsible civic waste management.
- Collaborated with regional volunteer teams to coordinate community clean-up initiatives and promote sustainable hygiene practices.

REFERENCES

Aminun Nahar

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