Ahmed Shabab Noor

Software Engineer III @ Fin.com

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SUMMARY

Software Engineer specializing in scalable backend systems, data platforms, and advanced analytics. AI-native engineer who builds fast across any domain. Skilled in building robust pipelines, ML solutions, and data-driven applications to deliver actionable insights. Expert in Go, Python, SQL, dbt, BigQuery, and cloud-native technologies. Published researcher with 4 peer-reviewed papers at IEEE and Springer conferences. Passionate about exploring new technologies and solving complex engineering challenges.

EXPERIENCE

Fin.com   *Stablecoin powered global payment infrastructure*

Software Engineer III   Dec 2025 - Present

- Early engineer building core backend services from the ground up, leveraging AI-driven development for rapid delivery.
- Built a double-entry bookkeeping ledger microservice from scratch with SHA-256 hash chain balance integrity and transaction processing engine supporting deposits, withdrawals, and automated reversals with balanced journal entries.
- Built RBAC system with 3-tier role hierarchy, Redis-cached permission resolution, complete team management with member and invitation lifecycle, capacity enforcement, and cross-organization duplicate prevention.
- Built a reverse proxy layer enforcing scope-based access control and environment isolation on all API traffic to the core orchestration service. Extended auth to support dual-path onboarding.
- Built internal API gateway for secure external financial API calls (payments, remittance, KYC) with per-user service ACLs, sensitive endpoint blocking, cryptographic request signing, and hot-reloadable Consul-based configuration.
- Designed cross-currency fee calculation engine with bidirectional calculation (forward/reverse mode) and extended batch payment processing with fixed-point arithmetic and commit-time validation against live FX rates.
- Integrated partners for virtual account provisioning and payout disbursements across USD, AED, EUR. Built webhook handlers for customer/transaction events and poll-based virtual account watcher with atomic state transitions.
- Built automated trade settlement reporting system aggregating trade data into CSV exports on configurable cron schedule, delivered via AWS SES.
- Built Kafka event-driven messaging infrastructure with Protobuf serialization, establishing the async inter-service communication backbone across the platform.

Pathao   *On-demand digital platform and mobility company*

Data Engineer II   Jul 2024 - Dec 2025

- Designed and developed a dynamic funnel analytics system merging data from Firebase, Pub/Sub, and transactional DBs with deduplication at user-second granularity. Processes 500M+ data points, saving ~$400K USD annually vs. market alternatives and 120+ man-hours/month.
- Completely redesigned and rebuilt the transliteration system as a standalone Go library with bidirectional Bangla-English support. Integrated into Food Search (15.3x more Bangla coverage, 15.1x more order confirmations) and Ride Location Search (78.8% to 96.2% Bangla coverage).
- Developed personalization microservice in Go with preference algorithms for food home-screen restaurant collections, reducing checkout navigation time by 32.53%. Built ETL pipelines for preference data and user profiles with smart caching.
- Built food search auto-suggestion POC, data pipelines for restaurant/dish/cuisine features, and performance benchmark dashboards for KPI tracking.
- Applied genetic algorithm to optimize string matching weights for address parsing, increasing area-level coverage by 2%. Enhanced missing place finder with multi-token support and rich notifications.
- Upgraded address history pipeline integrating partial orders data, adding ~2.7M new users' addresses and ~20M total addresses.
- Developed driver location ping analysis tools with map visualizations. Created monitoring dashboards for ETL pipelines and system health.

Data Engineer I   Mar 2023 - Jun 2024

- Designed and implemented ML models for ETA prediction in Dhaka and Chittagong, improving Chittagong's within-threshold rides from 20% to 60%. Built specialized holiday ETA models and comprehensive debugging dashboards.
- Contributed to address parsing service using customer historical data, improving hub-level coverage by 10%, accuracy by 1.5%, and overall accuracy by 7.5% (saving ~102K BDT/month). Optimized Redis storage reducing memory by 72%, saving $120/month per VM.
- Developed Bangla-to-English transliteration algorithm improving hub-level coverage by 8%, district-level by 1%.
- Built missing place finder using NLP on user address data, discovering 784 new landmarks in 2 major cities.
- Redesigned Firebase user behavioral data pipeline with dbt models processing 50-60M rows/day across multiple app sources.

- Conducted A/B test analysis on engagement metrics and Google Maps vs internal ETA, identifying $1K/month and ~$6K/month potential savings.
- Managed fraud detection systems; developed ML solutions for address deduplication; built reusable dbt data models focused on quality and scalability.

Data Engineering Intern   Oct 2022 - Feb 2023
- Developed first-ever ML solution for ride pickup ETA prediction for Dhaka city.
- Built CLI tools for data dictionary workflows and log management. Researched data governance solutions (column-level access, tagging).
- Contributed to in-house map system enhancements and worked on fraud detection using ML.

TECHNICAL SKILLS

Languages: Python, Go, SQL, JavaScript, TypeScript, Java, C, Bash

Cloud & Infra: GCP, AWS, Docker, Kubernetes, Helm, Kafka, Consul, GitLab CI, GitHub Actions

Data & Analytics: BigQuery, dbt, Redash, Looker Studio, Tableau

Databases: PostgreSQL, MySQL, Redis, Neo4j, Firebase

ML & Data Science: Pandas, NumPy, Scikit-learn, Matplotlib, Plotly

Tools: Git, VS Code, JetBrains IDEs, Postman, Jira, Notion

EDUCATION

United International University   Sep 2019 - Jan 2023
Bachelor of Science in Computer Science and Engineering
- CGPA 3.99/4.00, *Summa Cum Laude*. Completed 4-year degree in 3 years 4 months (10 trimesters).
- 100% scholarship for academic excellence in 9 out of 10 trimesters.
- Undergraduate Teaching Assistant for 7 courses across CS department in 4 trimesters.
- 4 peer-reviewed publications at IEEE and Springer conferences.
- Vice President of the Robotics Club (2021-2022).

PUBLICATIONS

Attention-Based Scene Graph Generation: A Review. *IEEE SKIMA 2022.* 🔗

A novel method for imbalanced data classification based on label reassignment. *IEEE TENCON 2022.* 🔗

Diabetes Mellitus prediction using Transfer Learning. *Springer MIET 2022.* 🔗

The impact of data locality on the performance of cluster-based under-sampling. *Springer MIET 2022.* 🔗

ACHIEVEMENTS

Prof. Jamilur Reza Chowdhury Championship Award — Bangladesh Blockchain Olympiad 2024   Sep 2024
Summa Cum Laude Academic Honor — 6th Convocation, United International University   Feb 2024

REFERENCES

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