

Mohammed Nasser Ibrahim

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Professional Summary

Backend Engineer with strong experience in Java and Python, specializing in high-performance backend systems, distributed architectures, and production-grade REST APIs. Proven experience in AI/LLM research engineering, focusing on model reasoning quality, mathematical correctness, and robustness. Strong foundation in applied mathematics, statistics, and formal reasoning, with hands-on experience in Lean theorem proving and research-grade evaluation pipelines.

Technical Skills

Programming Languages: Java, Python

Backend & Frameworks: Core Java, OOP, Collections, Streams, Concurrency, Multithreading, JVM Internals, Virtual Threads, Spring Boot, Spring MVC, Spring Security, JWT, OAuth2, Spring Data JPA, Hibernate, Microservices, REST APIs, Clean Architecture

Databases & Streaming: PostgreSQL, MySQL, Oracle, SQL Server, ClickHouse, Kafka, WebSockets

Testing & DevOps: JUnit, Mockito, SpringBootTest, Docker, CI/CD, Git, Maven, Gradle

Python & Data: Flask, Django, Pandas, NumPy, Scientific Computing, Reporting Systems

AI & Research: LLM Evaluation, Model Reasoning Analysis, Dataset Curation, Benchmark Design, Formal Reasoning, Lean (Theorem Prover)

Mathematics: Probability, Statistics, Regression, Hypothesis Testing, Time Series Analysis, Formal Proof Verification

Professional Experience

DataGear

Backend Engineer (AML Systems)

Oct 2023 – Present

- Developed backend modules for large-scale Anti-Money Laundering (AML) and regulatory compliance platforms.
- Built RESTful APIs supporting filtering, sorting, pagination, and multi-database integrations.
- Implemented AML components including KYC, FATCA, GOAML, DGAML, and fraud analytics.
- Delivered automated PDF/CSV reporting engines and real-time WebSocket services.

Turing Enterprise Inc

Java Software Engineer — RLHF System

Sep 2024 – Jun 2025

- Core engineer on Turing's primary data labeling and RLHF (Reinforcement Learning from Human Feedback) platform.
- Maintained and enhanced backend services to improve scalability, reliability, and throughput.
- Delivered architectural improvements supporting high concurrency and large-scale data pipelines.

Senior Software Research Analyst

Jun 2024 – Nov 2025

- Conducted AI/ML research and evaluation focused on advanced mathematics and quantitative reasoning.
- Performed statistical analysis including regression, hypothesis testing, and time-series analysis.
- Evaluated AI-generated outputs for correctness, depth, and reasoning quality.
- Reviewed academic research and curated high-quality datasets to improve LLM performance.

Pod Lead — Research Engineering

Jan 2025 – Mar 2025

- Led a research pod evaluating advanced mathematical and AI/LLM outputs across undergraduate, master's, and PhD levels.
- Owned task planning, quality standards, and final delivery of research evaluations with strict mathematical rigor.
- Performed formal reasoning and proof verification using the Lean theorem prover.
- Mentored researchers on formal proof construction and validation.

Scale AI — San Francisco, CA

LLM Engineer

Sep 2023 – Dec 2023

- Evaluated large language models across technical and mathematical domains.
- Analyzed reasoning quality, robustness, and task alignment.
- Designed evaluation criteria and identified systematic model failure patterns.

Independent

Freelance — Systematic Trading Platform

Oct 2025

- Built a real-time market analytics and systematic trading platform.
- Designed ClickHouse schemas and high-throughput streaming pipelines.
- Implemented Monte Carlo simulations, Value at Risk (VaR), drawdown, and portfolio risk metrics.

Selected Projects

- **E-Commerce Backend System:** Spring Boot backend with JWT/OAuth2 authentication, PostgreSQL, and CI/CD pipelines.
- **Real-Time Data Processing System:** Microservices architecture using Spring Boot, Kafka, and ClickHouse.
- **AI-Powered Traffic Control System:** Real-time congestion prediction and adaptive signal optimization.
- **Cambridge Dataset Analysis (Kaggle):** Exploratory data analysis, clustering, and model optimization using Python.

Education

Bachelor's in Pure Mathematics and Computer Science

Al-Azhar University, Cairo, Egypt

Final Grade: Very Good