

# Akash Shanmuganathan

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## Skills

**Programming Languages:** Python, Java, SQL, Kotlin

**Tools and Frameworks:** FastAPI, Spring Boot, LightGBM, SHAP, Streamlit, Pandas, Docker, Kafka, Redis

**Platforms & Infrastructure:** Jenkins, GitHub Actions, Render, Vercel, Postman, Tableau

**AI/ML Techniques:** Model Deployment, Credit Risk Scoring, Explainable AI (SHAP), Data Validation, Anomaly Detection

**Domain Knowledge:** Fintech, Fraud Detection, ML Ops, ETL & Data Quality, Scalable Microservices

## Projects

**Real-Time AI-Powered Content Moderation Microservice** - *Spring Boot, Python, Apache Kafka, Redis, REST APIs, Docker*

- Built a low-latency content moderation system combining Spring Boot microservices with Python ML models, processing over 10K text submissions/sec using Kafka and Redis.

**AI-Driven Credit Risk & Fraud Detection Dashboard** - *Python, LightGBM, SHAP, FastAPI, Streamlit, Docker*

- Developed a credit scoring engine with LightGBM (AUC > 85%) and explainability via SHAP. Served predictions via FastAPI and visualized results in Streamlit dashboards for compliance teams.

**Data Validation Engine for ML Pipelines** - *Python, Pandera, Streamlit, pandas, modular OOP*

- Engineered a modular pipeline for data quality checks including schema validation, rule enforcement, and drift detection. Visualized validation failures and drift metrics via Streamlit.

**FinSight - GPT-Powered Finance Insights Platform** - *React, Flask, PostgreSQL, GPT APIs, pandas, Chart.js*

- Full-stack analytics tool where users upload CSVs to receive GPT-based financial insights. Integrated pandas-driven backend with a React frontend and OpenRouter GPT APIs.

## Experience

**Hexaware Technologies**

Chennai, TN, India

*Software Engineer*

Jun 2022 – Jul 2023

- Reduced SQL latency by 35% by optimizing stored procedures for index calculations, accelerating real-time data pipelines.
- Developed 25+ RESTful APIs enabling downstream analytics and model integration, maintaining 99.9% data accuracy for stock index delivery.
- Reduced backend processing latency by 30% by redesigning validation logic within microservices using Spring Boot and Jenkins CI/CD.

**Hexaware Technologies**

Chennai, TN, India

*Associate Software Engineer*

Jan 2021 – May 2022

- Built RESTful APIs in Spring Boot with JWT authentication to support secure integration with data-driven financial systems.
- Contributed to backend migration from legacy .NET to scalable Java-based microservices, enhancing model deployment readiness.
- Engineered API-level validations using SQL and Postman, ensuring 99% accuracy for investment and rebalancing data.

**Neo Technologies**

Chennai, India

*Data Analyst Intern*

Jul 2020 – Dec 2020

- Automated data QA pipelines using Python and pandas, improving data integrity for public health dashboards by 30%.
- Developed anomaly detection and schema validation scripts for multi-source datasets, streamlining pre-ML ingestion checks.
- Collaborated on SQL-based ETL validation of 10K+ records/day, ensuring reliable input for downstream analytics and modeling.

## Education

Northeastern University, Boston, MA

Sep 2023 – May 2025

*Master of Science in Engineering Management*

Anna University, Chennai, India

Jun 2017 – Apr 2021

*Bachelor of Engineering in Electrical and Electronics Engineering*