

## Pranav Kuramkote Sudhir

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### PROFESSIONAL SUMMARY

Backend and Cloud Developer with 3+ years of experience building resilient, production-grade systems. Adept at designing scalable microservices, automating CI/CD pipelines, and deploying cloud-native applications on AWS and Azure. Proven success in architecting secure APIs, implementing real-time monitoring solutions, and managing containerized environments using Docker and Kubernetes. Strong foundation in distributed systems, RESTful API design, and event-driven architecture. Passionate about delivering software that scales, performs, and empowers users.

### TECHNICAL SKILLS

**Languages:** Python, SQL, JavaScript (Node.js), Bash

**Frameworks:** FastAPI, Flask, Express.js

**Cloud & DevOps:** AWS (EC2, ECS, MWAA, CloudFormation, S3), Azure (AKS, Azure Blob), Docker, Kubernetes, Jenkins, GitHub Actions

**CI/CD & IaC:** GitHub Actions, Jenkins Pipelines, Docker Compose, CloudFormation

**Observability:** Prometheus, Grafana, AWS CloudWatch, ELK Stack

**Data Streaming & ETL:** Kafka, Apache Spark, Airflow, dbt, Snowflake

**Databases:** PostgreSQL, MongoDB, Redis, Cassandra, SQL Server

**Version Control & Tools:** Git, GitHub, Jira, Confluence, Postman

### PROFESSIONAL EXPERIENCE

**Data Scientist** – Veeco Instruments, San Jose, CA · Jul 2024 – Dec 2024

- Developed a Retrieval-Augmented Generation (RAG) chatbot using vector embeddings of 500+ work instruction manuals to enable technicians to retrieve answers with source context in under 2 seconds.
- Architected and deployed **scalable microservices** using FastAPI and Docker, integrated with PostgreSQL and Redis on container-based infrastructure.
- Designed a **data mining pipeline** to analyze laser output, temperature, and energy signals from LSE machines, identifying thermal excursions with >95% detection accuracy when thresholds were exceeded.
- Built a **real-time monitoring dashboard** to visualize sensor anomalies, enabling early issue detection and reducing investigation time by 30%.
- Created a technician-facing **web portal** with form-level validations and range constraints, reducing erroneous entries by over 80%.
- Implemented user logging and audit trails to ensure full traceability and support regulatory compliance.

**Member Technical Staff** – HCL Technologies, Bangalore, India · Feb 2021 – Jun 2023

- Led the migration of legacy batch workflows to **event-driven microservices** using Kafka and Spark, deployed in a containerized environment.
- Engineered a robust CI/CD pipeline using **Jenkins** and GitHub Webhooks with **Docker-based staging/testing**, cutting release overhead by 60%.
- Built real-time API health dashboards using the **ELK Stack** and log-based metrics for application observability.
- Integrated Airflow with dbt to **orchestrate incremental data transformations** and scheduled ETL jobs across data warehouse platforms.
- Designed secure network architecture, access policies, and storage lifecycle rules to support scalable data management and retrieval.

**Software Engineer (Trainee Engineer)** – Quest Global Engineering, Bangalore, India · Nov 2019 – Dec 2020

- Developed backend services in Python to extract, transform, and serve data through RESTful APIs.
- Created **CI/CD pipelines** with Jenkins to automate tests, container builds, and image deployment to private registries.
- Automated system health monitoring via a custom Python agent reporting metrics to **Prometheus + Grafana** dashboards.
- Improved database performance through **SQL query optimization** and indexing on PostgreSQL and SQL Server.

### ACADEMIC PROJECTS

**AI Chatbot – Portfolio-Integrated RAG System**

Built and deployed a **Retrieval-Augmented Generation** (RAG) chatbot on my personal website that answers questions about my background. Indexed and embedded documents using Cohere embeddings, with semantic search powered by **PostgreSQL + pgvector**. Enabled accurate and context-aware responses with document citations.

**Fine-Tuned LLM Email Classifier – Scalable Inference Pipeline**

Modified a pre-trained LLM by adding a classification head to classify emails into categories such as spam, offers, and personal messages.

**Fine-tuned the model** on a labeled dataset and **orchestrated training/inference pipelines** using **Apache Airflow** and **Docker**. Enabled automated daily classification and logging.

**ML Model Deployment & Scaling – Readmission Prediction App**

Trained a hospital readmission prediction model using **XGBoost** on 56 engineered features including one-hot-encoded clinical attributes.

Deployed the model with a **FastAPI backend** and **React frontend**, integrated with **GCP PostgreSQL** for data logging and patient record management. Achieved >85% AUC and **full-stack CI/CD** readiness using Docker and GitHub Actions.

### EDUCATION

Northeastern University, Boston MA · MS in Data Analytics · CGPA: 3.89 · Sept 2023 - June 2025

### CERTIFICATION

IBM Data Science Certification