

# Rahul Vinayak

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## Professional Summary

- Technical Author with a strong software engineering background and 3+ years of experience working on backend systems, AI platforms, and production-grade services. Strong ownership of technical documentation, including APIs, system architectures, data pipelines, and operational workflows used by engineering and platform teams. Comfortable in Linux environments with command-line tools, Git-based workflows, cloud deployments, and system operations. Brings a programmer's mindset to documentation, focusing on clarity, correctness, and long-term maintainability.

## Education

<b>CMR Institute of Technology</b> , B.Tech in Information Science and Engineering	<b>Jul 2019 – Aug 2023</b>
• CGPA: 8.1/10.0 ( <a href="#">Marksheet</a> )	

## Work Experience

<b>Technical Author / Software Engineer</b> , GoComet India Pvt. Ltd. – Bengaluru, India	<b>Apr 2025 – Aug 2025</b>
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### 1) LLM-Driven Hazard Classification & GenAI Booking Assistant System

- Owned and maintained internal technical documentation covering model architecture, data flow, system APIs, and deployment setup for engineering and operations teams.
- Documented end-to-end workflows including data ingestion, inference pipelines, error handling, and monitoring.
- Reviewed and updated documentation alongside code changes to ensure accuracy as systems evolved.

### 2) Recommendation System for Real Estate Webpages

- Designed and implemented a machine learning API for personalized property recommendations.
- Authored technical documentation describing recommendation workflows, feature inputs, model selection trade-offs, and API integration for frontend and backend teams.

### 3) Data Validation System

- Designed and documented a data validation system to detect anomalies impacting machine learning models and downstream analytics.
- Implemented a wrapper interface around AWS Deequ and developed reusable validation extensions in Scala.

<b>Technical Author / Backend Engineer</b> , GoQuant Technology – Miami, USA	<b>Jan 2025 – Mar 2025</b>
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### 1) Real-Time Analytics & Performance Engineering for Crypto Trading Platform

- Authored and maintained technical documentation for analytics pipelines, data preprocessing steps, metrics definitions, and performance optimization strategies.
- Documented system assumptions and operational guidelines used by engineering and analysis teams.

<b>Associate CX Cloud Developer (Integration &amp; Documentation Focus)</b> , CRMIT Solution Pvt. Ltd. – Bengaluru, India	<b>Jul 2023 – Nov 2024</b>
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### 1) MuleSoft-Based Middleware Replatforming for Retail & Manufacturing

- Designed and implemented MuleSoft integration flows connecting Salesforce Commerce Cloud (SFCC) with ERP systems via SFTP.
- Owned technical documentation for integration architecture, data transformation logic, API contracts, deployment steps, and troubleshooting.
- Exposed an AI validation service as a FastAPI microservice and documented its integration with existing middleware, improving data processing performance by 40%.

### 2) AI-Driven Service Cloud Automation & Next Best Action Engine

- Implemented Salesforce Service Cloud features including Omni-Channel routing, Knowledge setup, and automated workflows.

- Documented Service Cloud configurations, workflow logic, and integration points.
- Developed and documented a recommendation engine using embeddings to deliver “Next Best Action” suggestions.

**Software Engineering Intern**, Cognizant Technology Solutions – Bengaluru, India

Apr 2022 – May 2023

#### ***1) Backend Development Internship for Telecom Operations***

- Implemented backend workflows and APIs using .NET, following clean architecture and version-controlled development practices.
- Maintained supporting technical documentation under senior engineer guidance. Service operations.

## Projects

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### **1) Classification of Trash Based On Recyclability (Apr 2022 – Jul 2022) | [Link](#)**

- Developed a deep learning-based garbage classification system to automatically sort waste into six categories (cardboard, glass, metal, paper, plastic, trash), achieving 92.96% accuracy.
- Authored technical documentation describing model architecture, data preprocessing steps, training workflow, and deployment using TensorFlow Serving.
- **Techstack :** Backend : Python 3.9+ **Framework :** TensorFlow, Keras **Data Processing :** NumPy, OpenCV, Pandas **Visualization :** Matplotlib, Seaborn **Model Deployment :** TensorFlow Serving **Version Control :** Git, GitHub

### **2) Insurance Claim Processing Automation (Jun 2023 – Aug 2023) | [Link](#)**

- Built a multi-stage LLM pipeline using CrewAI crews to coordinate tasks such as document parsing, fraud detection, policy lookup, and score reasoning, improving decision accuracy and reducing manual review time by 40%.
- Documented the end-to-end agent workflow, system architecture, and integration points to support maintainability and future extensions.
- **Techstack:** Python 3.9+, CrewAI, LangGraph, LangChain, OpenAI GPT, ChromaDB (vector store), Streamlit, FastAPI, stateful multi-agent orchestration.

### **3) Implementation of DROID-SLAM on Jetson AGX (Jan 2024 – Feb 2025) | [Link](#)**

- Implemented DROID-SLAM, an advanced Simultaneous Localization and Mapping (SLAM) system, on the NVIDIA Jetson AGX ORIN developer kit. The project enables real-time 3D mapping and localization using RGB-D cameras, specifically optimized for edge computing applications.
- Authored technical documentation covering system setup, hardware configuration, deployment steps, and performance evaluation.
- **Techstack :** Hardware : NVIDIA Jetson AGX ORIN Developer Kit, OAK-D RGB-D Camera **Frameworks :** PyTorch 2.0.0, OpenCV, Open3D **Development Environment :** Python 3.7.11, Conda environment, management JetPack 5.1 (L4T R35.2.1) **Libraries :** NumPy, SciPy, Matplotlib, Pandas, GPUUtil, scikit-image, scikit-learn, EVO (for SLAM evaluation) **Visualization Tools :** Open3D for 3D point cloud visualization

## Technologies

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**Programming Languages :** Python, Java, JavaScript, Scala, SQL

**Systems & Platforms :** Linux, Command Line Interface (CLI), Git, GitHub, Docker, Kubernetes

**Documentation & Tooling :** Markdown, reStructuredText, API documentation, technical diagrams, version-controlled documentation

**AI & ML Frameworks :** PyTorch, TensorFlow, Hugging Face Transformers, LangChain, LangGraph, CrewAI, vLLM

**Data & Retrieval Systems :** Pandas, NumPy, spaCy, ChromaDB, FAISS, Neo4j

**Cloud & DevOps :** AWS (EC2, ECS, SageMaker), GCP Vertex AI, MLflow, DVC, CI/CD with GitHub Actions and Jenkins

**Monitoring & Infrastructure :** CloudWatch, Prometheus, Grafana, NGINX

**APIs & Microservices :** FastAPI, Flask, REST APIs, gRPC, event-driven microservices

**Certifications :** AWS AI Practitioner Certification — AWS; MuleSoft Certified Developer Level 1 (Mule 4)