

# MARUTI KAMESHWAR MODALI

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[portfolio](#)

## SUMMARY

AI and Machine Learning-focused Software Engineer with 1.5+ years of experience building scalable enterprise applications and data-driven intelligent systems through statistical modeling and advanced machine learning techniques. Experienced in developing, deploying, and operationalizing machine learning and Large Language Model solutions, supported by strong expertise in backend engineering, SQL, CI/CD pipelines, and AWS cloud infrastructure.

## EXPERIENCE

### Bajaj Finserv Direct Ltd

Pune, India

Software Engineer

Jul 2023 - Aug 2024

- Re-engineered a normalized **PostgreSQL** database architecture and indexing strategy for a high-volume fintech platform to optimize data retrieval, achieving a **40% improvement in query performance**.
- Engineered a real-time **Java analytics dashboard** with integrated JPA/Hibernate to automate tracking of application approval trends, **reducing manual stakeholder reporting effort by 30%**.
- Conducted **A/B testing** on competing user onboarding flows to identify and eliminate friction points in the registration process, resulting in a **15% increase in user conversion**.

### Bajaj Finserv Direct Ltd

Pune, India

Software Engineer Intern

Jan 2023 - Jun 2023

- Built an asynchronous rapid onboarding pipeline using **Java Spring Boot** and **AWS SQS/SNS** to handle high-velocity customer data ingestion, successfully **reducing total onboarding latency by 60%**.
- Partnered with Product Owners in an **Agile sprint** to architect a **Bulk Upload feature via AWS S3**, streamlining multi-user data processing and **eliminating 95% of manual data entry errors**.
- Streamlined the deployment lifecycle by resolving 450+ technical debt issues and maintaining 90% JUnit coverage, leveraging **CI/CD pipelines** to ensure **99.9% system uptime** for data-critical services.

## PROJECTS

### Phishing Website Detection Pipeline – Python, Airflow, MLflow, AWS, Docker

[GitHub ↗](#)

- Architected an automated **MLOps pipeline** using **Airflow** and **MLflow** to evaluate **SVM, Logistic Regression, and Gradient Boosting**, streamlining feature selection to achieve an **0.98 F1-score** and eliminate training bottlenecks.
- Engineered a robust **CI/CD workflow** via **GitHub Actions** and **Docker** for deployment to **AWS EC2**, enabling **real-time inference** and ensuring seamless production updates with minimal deployment overhead.

### Multi-Agent RAG Pipeline with Dynamic Routing – LangGraph, Python, Hugging Face, ChromaDB, Groq

[GitHub ↗](#)

- Orchestrated a **multi-agent framework** using **LangGraph** to route queries between private data and public search, overcoming static LLM limits via specialized agents to ensure **high response accuracy**.
- Developed a retrieval engine using **Hugging Face** and **ChromaDB** for persistent memory, achieving **high-speed retrieval** and improved contextual awareness for complex private data queries.

### Natural Language SQL (Text-to-SQL) Agent – LangChain, LangSmith, Llama-3, Groq

[GitHub ↗](#)

- Designed a **RAG-based SQL agent** via **LangChain** for a **Student Database**, optimizing query accuracy through systematic **LangSmith** tracing and reasoning analysis for non-technical users.
- Integrated **Llama-3 (Groq)** for low-latency streaming inference to create an "instant-reply" experience, **significantly reducing query latency** and allowing for real-time analytics without manual SQL intervention.

## EDUCATION

### University of Maryland

College Park, MD

May 2026 Master of Science in Data Science; GPA: 3.92/4.0

### Vellore Institute of Technology

Andhra Pradesh, India

Aug 2019 - Jul 2023 Bachelor of Technology in Computer Science; GPA: 8.65/10.0

## TECHNICAL SKILLS

AI & Generative AI	LangChain, LangGraph, LangSmith, RAG, AWS Bedrock, MCP, Neo4j, Mistral-7B, Groq, Ollama, ChatGpt, LoRA & QLoRA Fine-tuning, ChatGPT
ML & Data Science	PyTorch, TensorFlow, Scikit-Learn, Hugging Face, NLTK, NumPy, Pandas, Matlab, R, Tableau, Matplotlib, Seaborn
MLOps & Cloud	MLflow, Airflow, Docker, GitHub Actions, AWS (EC2, S3, Lambda), Linux, Jenkins, Spark
Software Engineering	Java, Spring Boot, Flask, JPA Hibernate, JUnit, SQL (MySQL), MongoDB, HTML/CSS, Git

There is more to my story—discover the person behind the resume [marutikameshwari.github.io](https://marutikameshwari.github.io) ↗