Vishal Ramesh

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Results-driven Machine Learning Engineer with 5 years of experience designing, building, and deploying scalable, end-to-end ML solutions in production cloud environments. Specializes in developing production-grade NLP and Decision Support systems, with hands-on experience in microservice architecture (Java, Spring Boot) and robust MLOps pipelines. Proven ability to translate complex enterprise problems into impactful, data-driven applications.

Experience

Freshworks | Chennai, India
Lead - Data Scientist | Dec 2019 - Present
- Engineered and deployed a Root Cause Analysis (RCA) system, using data analysis to automatically diagnose fluctuations in key support metrics.
- Designed and built the core semantic parsing capabilities for the Query-to-Graph chatbot; later extended the system with multilingual support and engineering enhancements to improve scalability and performance.
- Built and maintained a scalable, custom intent detection **RESTful microservice**, creating the infrastructure for users to train, deploy, and manage their own models within the chatbot ecosystem.
- Mentored junior engineers on best practices for software design, code readability, and testing patterns, fostering team growth and improving overall code performance.
- Developed and deployed a production-grade model for handling small talk conversations, integrating it into the existing chatbot framework to improve user engagement.
- Contributed key research and proof-of-concepts for the design of the **ML monitoring pipeline** for the company-wide MLOps platform, focusing on best practices for model performance tracking and versioning.

Technical Skills

- **Programming Languages: Python, Java**
- **Backend & Microservices: Spring Boot, FastAPI, Flask, Celery, Redis, Docker**
- **ML & Data Science: TensorFlow, PyTorch, Scikit-Learn, NumPy, Pandas, Matplotlib**
- **Cloud & MLOps: AWS, CI/CD (Jenkins, AWS CodePipeline), MLflow, Databricks, Git**
- **Databases: RDBMS (SQL), MongoDB (NoSQL), Elasticsearch**

Projects

AutoBound for OpenStreetMap (Google Summer of Code)
- Developed a system to automatically identify and map building rooftops from aerial imagery, contributing a valuable tool to the OpenStreetMap community.
- Project Link:
  https://summerofcode.withgoogle.com/archive/2019/projects/6480296566849536

AI for Predicting Climate Change & Forced Displacement (Omdena)
- Collaborated on a project to build a system that identified areas with specific climate change patterns, helping to predict and understand forced displacement.
- Project Link: https://www.omdena.com/projects/ai-climate-change

Education

SASTRA Deemed to be University | Thanjavur, India
Bachelor of Technology, Computer Science and Engineering | 2016 - 2020
Relevant Coursework: Data Structures, Database Management Systems, Artificial Intelligence, Web Development, Object-Oriented Design.