

# Vishal Ramesh

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Lead Data Scientist with over 5 years of experience designing, building, and deploying scalable backend microservices and end-to-end ML solutions within a fast-paced SaaS environment. Specializes in production-grade NLP systems and robust MLOps pipelines. Proven ability to mentor engineers and collaborate across functions to translate complex problems into high-impact, 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
- **Frameworks & Backend:** Elasticsearch, Redis, Docker, **FastAPI**, **Flask**, **Celery**, **Spring Boot**
- **ML & MLOps:** TensorFlow, PyTorch, Scikit-Learn, NumPy, Pandas, **MLflow**, **CI/CD (Jenkins, AWS CodePipeline)**, **Databricks**, **Git**
- **Databases & Cloud:** **RDBMS (SQL)**, **MongoDB (NoSQL)**

## 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.