

# SATYA BHARGAV MADDIPATI

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## Education

### University of Wisconsin–Madison

M.S. in Computer Sciences — GPA: 4.0/4.0

Madison, WI

Sep 2025 - May 2027

### Indian Institute of Technology Bombay

B.Tech-M.Tech Dual Degree with Honors — GPA: 8.9/10

Mumbai, India

Aug 2018 - Jun 2023

## Experience

### Tata AIA Life Insurance | Software Engineer – Machine Learning

Mumbai, India

• PYTHON • FASTAPI • MICROSERVICES • DOCKER • KUBERNETES • AZURE • CI/CD

Jun 2023 - Aug 2025

- Designed and deployed production-grade **Agentic AI workflows** using **LangGraph** and **CrewAI** to automate insurance claims processing, reducing manual review effort by **35%** across daily claim volumes.
- Built scalable **RAG-based customer support system** serving **50K+** users using **GPT-4** on **Azure OpenAI** with **FastAPI** microservices, achieving **0.8s p95 latency** and **99.5% uptime**
- Fine-tuned **5+ open-source LLMs** (**Llama 3.2**, **Qwen 2.5**) using **QLoRA/PEFT** for document classification and intent detection, improving accuracy to **94%** on internal evaluation benchmarks
- Developed a personalized insurance recommendation engine using embeddings and collaborative filtering, processing over **2M** customer records to increase cross-sell conversion by **42%**

### IIT Bombay | Graduate Research Assistant

Mumbai, India

• PYTHON • DATA PROCESSING • PANDAS • NUMPY • TIME SERIES

Apr 2022 - Jun 2023

- De-trending the time series of air quality & removing meteorological effects influencing it by implementing a stochastic approach by implementing signal filtering to air quality time series data using the **KZ Filter**
- Built ensemble forecasting models using **XGBoost**, **Random Forests**, and **SARIMA**, integrating meteorological covariates for improved predictive accuracy
- Conducted **SHAP-based interpretability analysis** to quantify seasonal and feature-level contributions in time-series forecasting models

### Cognibot AI | Machine Learning Intern

Mumbai, India

• COMPUTER VISION • OBJECT DETECTION • EFFICIENTDET • PYTHON

Dec 2021 – Feb 2022

- Developed a scalable and performant computer vision-based AI model that can track humans in a retail store
- Implemented EfficientDet object detection model to perform better at a wide spectrum of resource constraints

### Eureka Infotech Inc | Data Analyst Intern

Mumbai, India

• AWS BATCH • DOCKER • AUTOML • ML PIPELINE

May 2021 - Jun 2021

- Decreased the runtime of a sales forecasting model from 2.5 days to 145 minutes by re-engineering workflows with batch computing.
- Designed, developed, and Dockerized an AutoML framework integrating multiple ML models with optimization pipelines.

## Projects

### Multi-Agent LLM Evaluation Platform | • LANGGRAPH • OPENAI API • DOCKER • STREAMLIT

Sep 2025

- Built multi-agent LLM evaluation framework using LangGraph and Streamlit to benchmark **GPT-4**, **Claude**, and **Gemini** across **1,000+ test cases**
- Designed automated judge agents achieving high correlation with expert human ratings, enabling scalable and repeatable LLM evaluation

### Source Apportionment Using Particle Number Size Distribution | • GMM • K-MEANS

Jan 2022 - Apr 2022

- Built ML framework combining Multi Log-normal Regression, Gaussian Mixture Models, achieving 25% higher accuracy over PMF baselines for particle size distribution

## Technical Skills

**Programming:** Python, C++, SQL, JavaScript, R, MATLAB, Java

**ML/AI Frameworks:** PyTorch, TensorFlow, Scikit-learn, XGBoost, Hugging Face, OpenCV, Pandas, NumPy

**LLMs & Agents:** GPT-4, Claude, Llama 3.x, Qwen, LangChain, LangGraph, CrewAI, QLoRA, PEFT

**Cloud & MLOps:** AWS (EC2, S3, SageMaker), Azure (ML Studio, Container Apps), Docker, Kubernetes, CI/CD

**Databases & APIs:** PostgreSQL, MongoDB, Redis, Pinecone, Weaviate, FastAPI, Flask, REST APIs

## Achievements

**Academic:** JEE Advanced Top 0.5% among 250K candidates (one of India's toughest exams)

**Industry:** Tata Innovation Workshop Nominee for Exemplary Performance, Web Coordinator at Techfest IIT Bombay, Inter-IIT Sports Bronze Medal