

Maitreya Darokar

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EDUCATION

Northeastern University - Khoury College of Computer Science, Boston, MA

Jan 2024 - Dec 2025

Master of Science in Artificial Intelligence

Relevant courses: Foundation of AI, Algorithms, Human Centered AI Development, Machine Learning, NLP

Maharashtra Institute of Technology - WPU, Pune, India

Jul 2017 - May 2021

Bachelor of Technology in Computer Science and Engineering

Related courses: Machine Learning, Data Structures, Database Management, Big Data

SKILLS

Languages: Python, Java, TypeScript, SQL, C++

AI, ML: Generative AI, RAG Systems, Natural Language Processing, Computer Vision, Semantic Search

Libraries: PyTorch, TensorFlow, Keras, LangChain, Hugging Face, Transformers, Scikit-learn, NLTK, Pandas, Numpy, OpenCV

Developer Tools & MLOps: AWS (Lambda, Bedrock, CDK, DynamoDB), CI/CD, Serverless Architecture, Infrastructure as Code (IaC), Docker, Vector Databases (ChromaDB), FastAPI, Git, Agile, Jira, Postman

Cloud & Data: AWS, Microsoft Azure, Data Analytics, PowerBI, Power Automate

PROJECTS

Serverless RAG Document Intelligence System

May 2025

- Architected a production-grade, serverless RAG system enabling organizations to "chat with their files," providing natural language access to private documents.
- Engineered a highly scalable, asynchronous query system using dual AWS Lambda functions (Docker) and DynamoDB for fault-tolerant state management, ensuring high responsiveness for concurrent users.
- Achieved sub-second semantic search by implementing ChromaDB with Amazon Titan embeddings and Meta Llama 3 (70B).
- Built and deployed the entire system as a RESTful API (FastAPI) using Infrastructure as Code (IaC) with AWS CDK and TypeScript for robust, repeatable deployments.

SemEval 2024 – Multimodal Detection of Persuasive techniques in Memes

Sept 2024 - Dec 2024

- For the SemEval 2024, Meme Persuasion Detection Task, built a classifier to detect propaganda in memes by fusing ResNet (Vision) and BERT (Text) embeddings, allowing the system to analyze both image and caption context simultaneously.
- Engineered the model to categorize memes into 22 granular persuasion techniques, utilizing Weighted BCE Loss to handle class imbalance within the complex label hierarchy.
- Developed a high-recall binary model to flag memes as "Propaganda vs. Non-Propaganda," creating an effective first-pass filter for automated content moderation.

WORK EXPERIENCE

Michelin, Pune, India | **Developer Analyst**

July 2021 - Jan 2024

- Engineered an automated data pipeline to ingest, process, and analyze HR data, culminating in role-based PowerBI dashboards to track employee attrition and hiring trends.
- Saved over 150 hours of manual processing annually and provided key metrics for strategic decision-making.
- Deployed a scalable automation solution using Power Automate and Oracle APIs for financial data processing, eliminating over 350 manual hours annually by streamlining financial closure procedures.
- Led a technical enablement program training 70+ developers per session on building scalable workflows and API integrations, reducing operational manual work by 35%.

Centre for Development of Advanced Computing (C-DAC), Pune, India | **Computer Science Intern**

May 2020 - July 2020

- Developed a 'Reverse Face Image Search' program using OpenCV and fine-tuning CNN, achieving 92% accuracy on over 10,000 images from Times of India, a news media organization.
- Engineered an automated image tagging system to associate names with recognized faces, significantly improving search efficiency for the organization.

AWARDS & RECOGNITION

Vendout – Startup Project (Ministry of Education, India - Innovation Challenge)

- Collaborated on developing an Android app and a web portal connecting small-scale businesses with customers, implementing secure digital payment gateways and enhancing online presence for local vendors.

Michelin India, Pune India

- Winner, Michelin Innovation Labs Hackathon (2022), built data-driven automation solution adopted org-wide.