

KRUNAL SHAMBHARKAR

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Technical Skills

Languages: Python, Java, C, HTML/CSS

Technologies/Frameworks: GenAI, LLM, LangChain, OpenAI, Hugging Face, Scikit-learn, MLflow, Docker, FastAPI, Streamlit, Pinecone, Hopsworks, GitHub Actions, Jira

Education

Oxford Machine Learning Summer School

July 2024

in-person Certificate Course, Organized by AI for Global Goals

University of Oxford, UK

B.E. in Information Technology

June 2017

RTM Nagpur University

Nagpur, MH, India

Experience

Aerizone Creative Labs, Nagpur

Jan 2024 – Present

AI/ML Engineer

Nagpur, MH

- **AeroBot Chatbot:** Spearheaded the design and deployment of an AI-powered chatbot using **RAG-based LLM** (OpenAI) and **Pinecone vector database**, achieving a **78% first-query resolution rate** and reducing issue resolution time by **56%**.
- Integrated **LangChain** and **HuggingFace** Embeddings with sentence-transformers to enhance semantic understanding, improving retrieval accuracy and user satisfaction by **37%**.
- **GeoAI Land Classifier:** Developed a web app using **Google's Gemini Pro Vision Model** and Bing Maps APIs, reducing manual land classification time by **85%** and improving accuracy by **60%**.
- Leveraged **Docker** for environment consistency and deployed on **AWS**, utilizing **GitHub Actions** for automated CI/CD, reducing deployment time by **25%** and increasing user engagement by **80%**.

Tata Consultancy Services - Digitate, Pune

June 2017 – May 2023

AI/ML Engineer

Pune, MH

- **Wafer Quality Classifier (ASML):** Developed and deployed a predictive maintenance model for semiconductor manufacturing, improving predictive accuracy by 15% and operational efficiency by 20%; implemented end-to-end MLOps using XGBoost, Python, MLflow, GitHub Actions, Docker, and FastAPI.
- **IT Workload Management Tool:** Built an XGBoost-based machine learning tool for IT workload forecasting, improving data processing efficiency by 30%, and deployed end-to-end ML pipelines using Docker, AWS, and GitHub Actions, reducing deployment time by 25%.
- **Jira Automation:** Engineered Python/Flask utility for automated defect tracking, reducing manual effort by 40%.

Projects

AI-based Carbon Footprint Calculator:

- Developed an AI-powered web application to help individuals track their carbon emissions and receive actionable recommendations for sustainability.
- Utilized LLMs and real-time data to personalize insights, enabling users to make eco-conscious decisions.
- **Tech:** Python, Groq API, Llama3-80b, Streamlit, LangChain.

AI for Public Policy

- **Public Policy FAQ System:** Designed an LLM-powered FAQ generator to simplify complex government policies into clear, accessible insights for citizens and policymakers.
- **Bias Detection in Policies:** Leveraged cutting-edge LLMs to analyze government policies and legal documents, assessing bias and fairness.
- **Tech:** Python, Groq API, Mistral 7B, Streamlit, LangChain.

Awards / Certification

- **Service and Commitment Award (TCS):** Recognized for dedicated service and unwavering commitment to company goals, demonstrating exceptional dedication and work ethic
- **Special Initiative Award (TCS):** Received for developing and executing a comprehensive event that brought together diverse teams to display their work, boosting morale and inter-team synergy.
- **AI For Everyone** Certification from Coursera.
- **LLMops Certification** from Udacity.
- **Machine Learning** Certification from Kaggle.