Karunya Srinivasan

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Summary

Machine Learning professional with a Master's degree and 1+ years of experience in deep learning, NLP and generative AI. Experienced in automating data pipelines, fine-tuning, model optimization, developing and deploying end-to-end scalable ML solutions using Python, TensorFlow, PyTorch, Docker and Azure.

Skills

Languages & Libraries: Python (Pandas, NumPy, Scikit-learn, XGBoost, Matplotlib, Seaborn, Plotly), SQL

ML & AI: Supervised, Unsupervised, Reinforcement Learning, NLP, LLMs, CI/CD, Model Optimization

Frameworks: TensorFlow, Keras, PyTorch, HuggingFace, LangChain

Databases: MySQL, PostgreSQL, MongoDB

Tools: Docker, Microsoft Azure, Git, Jupyter, Streamlit

Education

University of Western Ontario, MSc in Computer Science   Sept 2024 – Sept 2025
- **GPA:** 4.0/4.0
- **Courses:** Intro to Machine Learning, Advanced AI, Database II, Brain Inspired AI, Parallel Computing
- **Research:** Conducted comparative analysis study of XAI models for a PyTorch-based predictive model on synthetically generated tabular data, evaluating performance across different scenarios.

Anna University, BE in Computer Science   2020 – 2024

Experience

Data Research Assistant, University of Western Ontario – London, Canada   July 2025 – present
- Collected, cleaned, and preprocessed language text datasets for LLM training and fine-tuned LLM to adapt style, tone, and knowledge representation for low-resource language using Python, PyTorch, and Hugging Face Transformers.
- Designed and deployed a RAG pipeline with FAISS vector database for domain-specific knowledge retrieval.
- Conducted embedding optimization and model evaluation (BLEU, relevance scoring) to improve accuracy and fluency.

Freelance Data Analyst, E-commerce Platform – Remote   Mar 2023 – July 2024
- Conducted customer segmentation and sales trend analysis using SQL and Python, increasing revenue by 15%.
- Applied regression and forecasting models for demand prediction and dynamic pricing optimization.
- Monitored sales funnel metrics, identifying bottlenecks that improved conversion rates by 12%.

Developer Intern, National Association of Software & Service Companies – Chennai, India   Mar 2023 – May 2023
- Built a NLP-based chatbot for automating customer support via Python (Pandas,Scikit-Learn), reducing human intervention by 40%.
- Collaborated with a team to clean, preprocess, and validate noisy 10K+ user queries, developing text classification model for sentiment analysis with 90% accuracy.
- Deployed via Telegram API, handling 100+ daily queries and improving response efficiency.

Projects

Natural Language Query Agent
- Developed Streamlit app integrating LangChain SQL Agents with local LLM (Ollama).
- Enabled real-time zero-shot SQL query generation and execution on uploaded datasets.

ML-Powered Taxi Fare Prediction Using Docker
- Built and fine-tuned a LightGBM regression model (R^2=0.84) using 50K+ trip records to predict taxi fares.
- Conducted feature engineering, hyperparameter tuning, and automated data extraction with Docker.

Depression Detection Using Twitter Posts
- Implemented LSTM-CNN with Word2Vec embeddings for sentiment classification on 32K tweets.
- Achieved 99% accuracy through stratified sampling and dropout regularization.

News Summarizer using Web Scraping & NLP
- Automated article extraction from news websites using BeautifulSoup and Requests.
- Fine-tuned a HuggingFace BART for abstractive summarization; added multithreading to improve runtime by 6×.

Certifications

- Google Data Analytics Professional Certificate
- Master Artificial Intelligence: Build 6 AI Projects – Udemy