CHARISHMA GARIKAPATI

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Toronto, Canada

SKILLS

- **Languages:** Python, R, SQL
- **Machine Learning & AI:** LLMs, Generative AI, RAG, NLP, Transformers, CNNs, GANs, TensorFlow, PyTorch
- **Cloud & DevOps:** Microsoft Azure (Azure ML, Azure DevOps, Azure Cognitive Services, AKS, Azure Bot Services), GCP (Vertex AI, Cloud Run), AWS
- **CI/CD & Version Control:** Azure DevOps, Git, Git Bash, GitHub Actions, Docker
- **Frameworks & Tools:** Flask, FastAPI, LangGraph, LlamaIndex, Pinecone, FAISS, Vector DBs, OpenAI API, Together.ai API
- **Visualization:** Tableau, Power BI, Matplotlib, Seaborn
- **Databases:** MySQL, Vector DBs, BigQuery

PROFESSIONAL EXPERIENCE

United Way Greater Toronto **Aug 2024 - Nov 2024**
Data Analyst
Topic Modelling for Community Outreach Insights

- Conducted basic topic modelling on outreach communications from 100+ communities to help United Way Greater Toronto understand key themes and community concerns.
- Preprocessed unstructured text data from various media sources (emails, social posts, newsletters) using standard NLP techniques like tokenization and stopword removal.
- Generated simple insights to support the organization's communication strategy and improve how programs are aligned with community needs.

Tech Stack: Python, Pandas, NLTK, Scikit-learn, Jupyter Notebook, BERT, Llama

Socio-Economic Trend Analysis for Peel, Toronto, and York

- Analyzed 30 years of socio-economic data from Statistics Canada and other sources to uncover trends in poverty, financial stability, and housing across Peel, Toronto, and York Region.
- Conducted disaggregated analysis by race, immigration status, income level, and age, identifying regional disparities to support community initiatives.
- Created data visualizations (bar charts, time series graphs, geospatial maps) using Tableau, Power BI, and Python to communicate trends effectively.
- Collaborated with United Way Greater Toronto to deliver an executive-level slide deck summarizing findings and actionable recommendations.

Tech-stack: Tableau, Power BI, Pandas, Random Forest, Streamlit

Brane Enterprises **Oct 2022 - Oct 2023**
Data Scientist
Database Query Generation Platform

- Collaborated on the development of a Database Query Generation Platform, leveraging a Large Language Model (LLM) to convert natural language queries into SQL commands, simplifying database management for non-technical users.
- Assisted in designing a user-friendly web interface and integrating a pre-trained LLM to ensure accurate SQL query generation under the guidance of the team lead.
- Supported backend development and conducted testing to enhance system scalability, query accuracy, and robustness for complex scenarios.

Tech-stack: Flask, Open AI API, SQL-BERT, MySQL, TensorFlow, Postman

KnowHub (Knowledge Hub)

- Contributed to building a Retrieval-Augmented Generation (RAG) Application to enable users to query a set of documents and receive precise and relevant answers.
- Assisted in training the model on internal documents and integrating a document retrieval system, ensuring accurate and contextually relevant responses.

- Collaborated with the team to test and optimize the application, also built a front-end face for it.

Tech-stack: Streamlit, Pinecone vector DB, Open AI API.

Brane Enterprises **May 2022 - Oct 2022**
Data Science Intern

Email Classification System

- Contributed to building an AI-driven Email Classification System, streamlining the routing of internal client emails to appropriate teams and cutting manual intervention by 80%.
- Supported the development of Naive Bayes and SVM models, focusing on optimizing classification accuracy through feature engineering.
- Worked on scalable preprocessing pipelines to clean and prepare data for the models, and assisted with hyperparameter tuning to enhance performance.
- Collaborated closely with the team lead to ensure the system's real-time reliability and scalability for handling diverse email datasets.

Tech-stack: SVM, Naive Bayes, TF-IDF, Word embeddings, NLTK.

FREELANCE EXPERIENCE

University Chatbot (LangGraph Multi-Agent System) **April 2025 - June 2025**

- Designed and implemented a global university chatbot using LangGraph and a multi-agent LLM architecture.
- Built and deployed both frontend and backend to enable natural language interaction with academic content, admissions info, and campus services.
- Initially launched for Northeastern University, then scaled to support all universities and colleges worldwide, with dynamic UI filtering by country, university, and campus.
- Integrated Together.ai API using the Mistral model, along with Vector DBs and contextual memory chains, to deliver accurate, relevant, and institution-specific responses.
- Prioritized scalability, speed, and adaptability to serve a diverse global user base with real-time educational support.

Tech Stack: React, Tailwind CSS, LangGraph, LlamaIndex, Together.ai API, Mistral model, Flask, FastAPI, Python, Pinecone, Vector DB, Git, Netlify, Render

HR Operations Automation using Vertex AI - Google Cloud **Feb 2025 - April 2025**

- Building a suite of AI agents using Google Cloud Agent Builder to enable natural language access to HR resources such as company policies and payroll information.
- Developing a serverless backend with Cloud Run to serve policy documents stored in Cloud Storage, enabling secure, scalable access via API in response to agent queries.
- Integrating BigQuery to query and process payroll data, and creating a reusable automation playbook to streamline data retrieval and reporting workflows.

Tech Stack: Google Cloud Agent Builder, Cloud Run, Cloud Storage, BigQuery, Python, SQL, Gemini

Audio-Driven AI Assistant **Dec 2024 - Feb 2025**

- Developed an Audio-to-Text and Answer Retrieval System enabling users to interact via voice input, converting audio queries to text and retrieving answers using a Large Language Model (LLM) like ChatGPT.
- Built an audio-to-text pipeline using SpeechRecognition tools, seamlessly integrated with an LLM to process queries and generate accurate responses.
- Designed an intuitive user interface to display responses, ensuring a smooth and accessible user experience across devices.
- Focused on optimizing speech-to-text accuracy and delivering contextually relevant answers in real-time.

Tech-stack: Whisper Model, meta-llama/Llama-3.2-3B-Instruct, Flask

EDUCATION

Northeastern University **Jan 2024 - June 2025**
Masters in Data Analytics - Applied Machine Intelligence

Osmania University **Mar 2019 - Mar 2023**
Bachelor of Engineering - Information Technology

CERTIFICATIONS

- **Introduction to Agents - Hugging Face**
- **Generative AI Fundamentals - Databricks**
- **ML model Development, Deployment and Operations - Databricks**
- **AI Associate - Salesforce**
- **Machine Learning Specialization - Stanford University**: Supervised Machine Learning: Regression and Classification, Advanced Learning Algorithm, Unsupervised Learning, Recommenders
- **Deep Learning Specialization - Deeplearning.ai**: Neural network and Deep Learning, Improving Deep NN: Hyperparameter Tuning, Regularization and Optimization, Structuring ML Projects, Convolutional Neural Network(CNN), Sequence Models
- **SQL for Data Science - University of California**
- **Python for everybody - University of Michigan**