Swarna Ravula

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EDUCATION:

Master of Science in Computer Science
University of Texas at Arlington, Arlington, TX (Aug 2022 – May 2024) | **CGPA: 3.7/4.0**
Specialization: Artificial Intelligence, Machine Learning, Big Data & Cloud Computing

B.Tech in Computer Science
TKR College of Engineering & Technology, India (July 2015 - June 2019) | **GPA: 8.0/10.0**

SUMMARY:

Innovative Data Scientist with expertise in large-scale data analytics, quantitative modeling, and machine learning solutions tailored for financial services and engineering applications. Experienced in data-driven decision-making, cloud-based analytics stacks (AWS, GCP, Azure), and statistical modeling to drive business impact. Proficient in structured and unstructured data processing, predictive analytics, and end-to-end ML model deployment. Adept at designing and optimizing scalable data platforms to support engineering and business analytics at scale. Passionate about collaborating with cross-functional teams to build data-driven solutions for complex business challenges.

TECHNICAL SKILLS:

- **Programming:** Python, R, SQL, Java, Scala
- **Data Analytics & ML:** Pandas, Scikit-learn, TensorFlow, PyTorch, Spark MLlib, Hugging Face, OpenAI APIs
- **Data Wrangling & ETL:** SQL, Apache Spark, Airflow, Hive
- **Cloud Technologies:** AWS (Athena, RDS, Redshift, Glue, Lambda), GCP (BigQuery, Vertex AI), Azure
- **Data Visualization:** Tableau, Plotly, ggplot2, Power BI, Grafana, Prometheus
- **Big Data & Storage:** HDFS, Snowflake, Kafka, DynamoDB
- **Vector Databases:** FAISS, Pinecone, ChromaDB
- **DevOps & MLOps:** Kubernetes, Docker, Terraform, CI/CD Pipelines, MLflow
- **Deep Learning:** CNNs, RNNs, LSTMs, GANs, Transformers (ViT, GPT, BERT)
- **NLP & Gen AI:** LLM fine-tuning, RAG, RAGAS, Vector Search Optimization

PROFESSIONAL EXPERIENCE:

Machine Learning Engineer
Profound Ventures LLC | Humainity AI | Dallas, TX *(Jul 2024 – Jan 2025)*

- Developed & productionized **Gen AI solutions** for Humainity AI, an AI-powered Concierge-Level Care platform integrating Emotional Intelligence into AI (EI2AI).
- Built **LLM-powered conversational AI agents** trained on Outcomeus clinical-genetic biobank data (153,000+ patients) for handling pain and emotional distress recognition.
- Developed & deployed large-scale **data analytics pipelines** for AI-driven concierge-level healthcare services.
- Designed **predictive models** for risk assessment and emotional distress recognition, leveraging structured & unstructured data.
- Built scalable **RAG-based** solutions using FAISS, Pinecone, and ChromaDB for real-time data retrieval.
- Created **AWS-based cloud AI architecture** (Lambda, SageMaker, Redshift) for optimized computational efficiency.

Machine Learning Engineer Intern
Asurion | Nashville, TN *(Jun 2023 – May 2024)*

- Assisted in developing **predictive fraud detection models**, contributing to improved risk assessment accuracy.
- Supported the implementation of **NLP-based data pipelines** to process unstructured claims data into actionable insights.
- Assisted in **vector search tuning** in FAISS & ChromaDB, improving data retrieval accuracy.
- Helped build **ML pipelines** on AWS and GCP (Vertex AI, SageMaker, Lambda, BigQuery) to streamline analytics workflows.
- Conducted **data wrangling and feature engineering** for machine learning models.

- Conducted research and experiments with **generative LLMs** to explore new AI-driven customer service applications.
- Assisted in designing and iterating on **GenAI prompts** based on performance metrics and user feedback.
- Contributed to the development of **AI models** for automation and bot capabilities in digital customer service channels.
- Assisted in training mechanisms using **human-in-the-loop** approaches to enhance AI response accuracy.
- Supported the development of **scalable AI solutions** configurable through a no-code interface.
- Contributed to a **Minimum Viable Product (MVP) test-and-learn approach**, assisting in iterative development from problem framing to production deployment.

Fraud Analytics – Data Scientist
Tata Consultancy Services | USAA | Hyderabad, India *(Jan 2020 – Jul 2022)*

- Assisted in designing **AI-driven fraud analytics models** for detecting synthetic fraud and identity theft in financial transactions.
- Supported the development of **NLP pipelines** leveraging classical machine learning techniques (e.g., TF-IDF, word embeddings) and early transformer models to extract financial entities, contributing to a 25% improvement in fraud detection rates.
- Helped engineer **real-time fraud monitoring** using **Apache Spark, Hadoop, Kafka, Hive, and NoSQL databases**, reducing false positives by 20%.
- Collaborated on **graph-based fraud network analysis** using **Neo4j and NetworkX**, enhancing fraud ring detection by 30%.
- Conducted **data preprocessing, feature engineering, and exploratory data analysis** with **Pandas, NumPy, and SQL** to support model development.
- Assisted in developing **model validation and performance tracking** strategies using **MLflow and Scikit-learn** to ensure production readiness

Software Associate
SysTech Corp Inc | Hyderabad, India *(May 2019 – Dec 2019)*

- Developed **rule-based chatbots** and **NLP models** for automating customer interactions, improving efficiency by 30%.
- Built and deployed **machine learning models** for sentiment analysis and recommendation systems using Python, NLTK, and Scikit-learn.
- Implemented **TF-IDF and word2vec-based search solutions** to improve information retrieval for customer support queries.
- Assisted in developing **business intelligence dashboards** using Tableau and SQL to analyze user interactions and feedback trends.

ACADEMIC PROJECTS:

Clinical Named Entity Recognition (NER) using BioBERT & DistilBERT *(Nov 2023 – Jan 2024)*

- Built a NER system extracting diseases, medications, and procedures from clinical notes.
- Deployed model using AWS Lambda & FastAPI for real-time clinical decision support.

Image Captioning Using Vision & Language Transformers (ViLT) *(Jan 2023 – Apr 2023)*

- Developed an AI-powered image captioning model combining ViT & GPT architectures.
- Fine-tuned on MS COCO dataset to generate accurate, context-aware captions.

CERTIFICATIONS:

- Microsoft Certified: Azure AI Engineer Associate
- Python Programming – Coursera
- Machine Learning – Coursera
- Generative AI with Large Language Models – DeepLearning.AI & AWS
- R Programming for Data Science – DataCamp