

# VARA PRASAD

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## PROFESSIONAL SUMMARY

Computer Science graduate with hands-on experience in Python, C++, and SQL, applying algorithms, data structures, and complexity analysis to build scalable backend and ML-driven systems. Strong foundation in distributed systems, CI/CD pipelines, and cloud-based deployment with AWS, delivering maintainable, high-quality software in collaborative environments.

## EXPERIENCE

### Student Assistant

Texas Tech University

Aug 2023-Jun 2025

Lubbock, Texas

- Built Python and SQL pipelines that prepared clean, analysis-ready datasets for more than 10,000 records and reduced experiment turnaround time by 30%
- Maintained and optimized Linux-based GPU environments on over 50 workstations, resolved bottlenecks, and sustained 99 percent uptime for faculty and student experiments
- Automated data preparation for computer vision work using Pandas and OpenCV, reducing manual labeling effort and improving dataset consistency

### Machine Learning Research Assistant

REVA University

May 2022 – Jun 2023

Bangalore, India

- Developed a CNN/LSTM/GRU-based gesture recognition system with 95% accuracy, applying algorithmic optimizations to speed up inference and improve accessibility for speech-impaired users
- Reduced model training RAM usage by 64% through memory-efficient Keras Sequence generators, increasing experiment throughput for the research team

## ACADEMIC PROJECTS

### Privacy-Preserving Disease Risk Predictor | Python, Ten SEAL, CKKS, SQLite, Flask

- Developed fully homomorphic encryption system using CKKS scheme to predict disease risk scores with 92% accuracy while maintaining complete patient data privacy throughout computation
- Implemented client-server architecture with TenSEAL library, processing 500+ encrypted patient records and reducing data exposure risk by 100% through encrypted healthcare analytics

### LLM-based Network Security Chatbot | RAG, Lang Chain, FAISS, OpenAI API, Jupyter

- Developed RAG-powered Q&A chatbot integrating 200+ network security documents into FAISS vector database, achieving 88% query satisfaction rate through semantic search with OpenAI embeddings
- Engineered hybrid retrieval system with fallback architecture, reducing response time by 45% and ensuring 95% comprehensive response coverage with full source traceability

### Personalized AI Financial Advisor | Google GenAI API, SQLite, Alpha Vantage

- Built an AI Financial Advisor using Google's GenAI API and Alpha Vantage API integration, delivering personalized investment strategies and real-time stock analysis through advanced prompt engineering and multi-intent query processing and achieved 35% improvement in recommendation accuracy

## SKILLS

- **Machine Learning & GenAI:** LLMs, Agents, RAG, Model Development, Model Evaluation, Neural Networks, Transformers, NLP
- **Data Analysis:** Exploratory Data Analysis, Hypothesis Testing, A/B Testing, Data Visualization, Python Data tools, Hadoop, PySpark
- **Programming & Cloud:** Python, SQL, Git, Amazon Web Services (AWS), Big Query, Docker, Kubernetes, Jenkins, Linux Commands
- **Libraries & Tools:** Databricks, OpenAI, Pandas, Excel, NumPy, Matplotlib, Hugging Face, PyTorch, TensorFlow, Keras, Scikit-Learn, Seaborn, OpenCV, Tableau, SageMaker, vLLM, TensorRT-LLM, Advance Excel

## EDUCATION

- **Masters in Computer Science, Texas Tech University,** Texas, United States – 2023-2025 | CGPA: 3.55

Coursework: Operating System, DBMS, Cryptography, Artificial Intelligence, Algorithms, Neural Networks, Data Analysis

- **Bachelors in Electronics and Computers, REVA University,** Bangalore, India – 2019-2023 | CGPA: 9.14

Coursework: Data Engineering, Machine Learning, Deep Learning, Web Development, Software Development, Data Science

## CERTIFICATIONS

- Google Data Analytics Professional Certification