Gaurav Chintakunta

+1-872-258-2126 | gaurav.pvt25@gmail.com | LinkedIn | GitHub | Portfolio

Education

University of Illinois at Chicago | Master of Science in Computer Science | GPA - 4.0/4.0 *Expected May 2026*
Coursework: Responsible AI Engineering, Neural Networks, Quantum Computing, Computer Algorithms, Data Science

JNT University Hyderabad | Bachelor of Technology in Computer Science *May 2024*
Coursework: Machine Learning, Design and Analysis of Algorithms, Data Science, Big Data, Python App Programming

Experience

- **Graduate Researcher | GAN, Deep Learning, TensorFlow, Spatial Data Analysis** *Jan 2025 - Present*
  University Of Illinois at Chicago, Computer Science Chicago, USA
  - Architected a Transformer-based GAN pipeline (Pix2Path) to predict Alzheimer's pathology from spatial transcriptomics, boosting prediction accuracy by 30% over baseline models.
  - Optimized data preprocessing and patch extraction workflows for the Lakeshore HPC cluster, cutting data processing time by 40% and reducing memory usage.
  - Implemented real-time TensorBoard monitoring and model checkpointing to streamline experiment tracking and speed up model iterations.
- **Machine Learning Intern | Python, Scikit-learn, Tableau, Tensorflow, Jira** *May 2023 - Sept 2023*
  AIML Analytics Solutions Hyderabad, Telangana
  - Developed and optimized ML models using Scikit-learn to forecast cricket player performance, providing predictive analytics for strategic team decisions.
  - Boosted predictive model accuracy by 15% on test data by conducting in-depth EDA to discover and validate critical KPIs.
  - Streamlined project workflows by collaborating with three cross-functional teams in an Agile environment, contributing to a reduction in the development cycle time.

Projects

- **AI - Research Assistant | Python, LangChain, GPT, Pinecone, RAG, Streamlit** [Github]
  - Architected a RAG pipeline using LangChain, improving semantic search accuracy by 20% over traditional models.
  - Launched the system as an interactive Streamlit app, which achieved 95% retrieval consistency in repeated query tests.
  - Reduced query response time by 15% by optimizing the Pinecone vector indexing strategy, as confirmed by benchmark tests.
- **Movie Recommendation Engine | Python, Docker, FastAPI, SVD++, Scikit-learn** [Github]
  - Engineered a collaborative filtering model using SVD++ that scored a 0.92 RMSE against the held-out test dataset.
  - Containerized a scalable FastAPI backend with Docker, successfully serving recommendations in <200ms during load testing.
  - Automated an end-to-end ML pipeline to provide continuous, offline model retraining and performance tracking.
- **AI Documentation Bot | Python, LangChain, Pinecone, OpenAI, Scikit-learn, Sentence Transformers** [Github]
  - Designed a RAG pipeline (LangChain, Pinecone, LLM) for semantic search across documentation for Pandas, NumPy, and Scikit-learn.
  - Implemented an MLP classifier (Scikit-learn) to evaluate and prioritize retrieved documents based on predicted source reliability (API/tutorial/community).
  - Deployed an interactive Streamlit app enabling natural language queries and delivering source-prioritized answers.
- **Crime Type and Occurrence Prediction | Python, Django, SQLite, HTML, CSS, JS** [Github]
  - Built a full-stack Django web app to predict and visualize crime types from a 50,000 record dataset.
  - Trained a Naive Bayes model that reached 85% prediction accuracy when validated against the held-out test set.
  - Configured a dual-role system with role-based access control to serve both public users and service providers.
- **EnergyTrend Analytics: ML-Driven US Energy Analysis | Python, Scikit-learn, Keras, Matplotlib** [Github]
  - Analyzed more than 530,000 U.S. energy records by writing custom Python scripts to automate EIA API data extraction.
  - Applied a Random Forest Regressor that attained a 77% R-squared value during model validation.
  - Established a robust preprocessing framework to automatically handle missing values and validate multi-dimensional data.

Skills

- **Programming Languages:** Python, Scala, C, JavaScript, HTML, CSS
- **ML/DL & Vector Retrieval:** TensorFlow, PyTorch, Scikit-learn, Transformers, LangChain, Pinecone
- **Data Processing & Visualization:** NumPy, Pandas, Matplotlib, Seaborn, OpenCV
- **AI/ML:** LLMs, LangChain, CNN, RNN, LSTM, PEFT, DSPy, RAGs, Autoencoders
- **Data Science:** Data Mining, Text Mining, Preprocessing Pipelines
- **Tools & Platforms:** Tableau, Spark, MySQL, React, Streamlit, Docker, Keras, GitHub

Certifications

- **Microsoft Azure Fundamentals: AZ-900**
- **Microsoft: Introduction to Programming using Python**
- **HTML, CSS, and JavaScript for Web Developers – Johns Hopkins University**