Niveditha Nerella

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PROFILE

Passionate about turning data into actionable insights using machine learning, AI, and NLP. Skilled in building and deploying models, creating interactive dashboards, and solving real-world problems across industries. Eager to contribute to cutting-edge Data Science and AI teams and looking for full-time opportunities starting June 2026.

EDUCATION

Purdue University, M.S., in Computer and Information Technology GPA: 3.9 / 4.0 — Aug 2024 – May 2026
Relevant Courses: Deep Learning, The Data Mine (with Caterpillar Inc.), NLP, Explainable AI

National University of Singapore, B.S. (Honors), in Data Science and Analytics — Aug 2019 – May 2023
Minor in Computer Science
Relevant Courses: Machine Learning, Data Science, Artificial Intelligence, High Dimensional Data Analysis

SKILLS

Programming Languages: Python, R, SQL, Javascript, CSS, React
Data Science & Analysis: Pandas, NumPy, Scikit-learn, StatsModels, Matplotlib, Seaborn, Tableau, Streamlit
Machine Learning & AI: Regression, Classification, Clustering, Ensemble Methods, XGBoost, Neural Networks, Hyperparameter Tuning
Deep Learning & LLMs: PyTorch, Hugging Face Transformers, LoRA, PEFT, qLoRA, LangChain, OpenAI API, Azure OpenAI, Prompt Engineering
Natural Language Processing: Text Classification, Named Entity Recognition, Topic Modeling, Sentiment Analysis, RAG

PROFESSIONAL EXPERIENCE

Purdue's Rosen Center for Advanced Computing (RCAC), Graduate Data Science Intern — May 2025 – Present
- **Fine-tuned and deployed LLaMA 3.2 3B-Instruct** using **qLoRA** and **PEFT** to generate question-answer-specific feedback, optimizing model efficiency and performance on **Hugging Face**.
- Designed and deployed **LLM-based NLP pipelines** and interactive **React** visualizations for ACID-R, a DoD-funded platform, enabling natural-language vendor capability analysis and faster, data-driven sourcing decisions.

HTX - Home Team Science and Technology Agency, Data Scientist, Decision Science — Aug 2023 – Aug 2024
- Developed **location-based crime prediction model** improving forecasting accuracy from **48% to 91%**, enabling optimized resource allocation.
- Built and deployed a **document-generation chatbot** for creating Approval of Requirements (AOR) documents using **Azure ML** and **OpenAI API**.

PROJECTS

GANs vs. Diffusion: Who Generates CelebA Better? — Jan 2025 – Mar 2025
- Built and compared GAN and diffusion models to generate realistic face images on a CelebA subset.
- Evaluated image quality using **Frechet Inception Distance (FID)**.

Pun Intended! — Sep 2024 – Oct 2024
- Built a hybrid baseline + LLM + RAG model to detect puns and generate explanations.
- Deployed a **Streamlit chatbot** that handles both speech (Google Speech Recognition API) and text queries.

Voice of the Customer Analysis — Feb 2023 – Apr 2023
- Built an NLP pipeline to analyze customer reviews using **sentiment analysis and topic modeling.**
- Engineered **word2vec + TF-IDF** embeddings with **PCA** to improve sentiment classification.

Prediction of m6A RNA Modifications, Genomics in Data Science — Sep 2022 – Nov 2022
- Developed a classifier to predict m6A RNA modifications from direct RNA-seq data.
- Compared **regression, random forest, XGBoost, and SVM** with feature selection and oversampling.

ACHIEVEMENTS

- **Publications:**
  - *"Leveraging AI to Drive Operational Excellence in the Manufacturing Sector"* at the **10th International Conference on Operational Excellence** (Portugal, Sep 2025).
  - *"Can AI be your energy consultant?"* at the **17th International Green Energy Conference** (Iceland, Oct 2025).
- **Conferences:** PEARC '25, All Things Open 2025, Supercomputing 2025 (SC25).