Rahul Tamanam

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Skills

Data Engineering: Python, R, SQL, ETL/ELT, Snowflake, Data Pipelines, Data Modeling, Cost Optimization, PySpark, Hadoop(HDFS), Hive, Impala
Databases and Tools: MySQL, SQLite3, PostgreSQL, MongoDB, Git, Docker, FastAPI
Data Analysis and Visualization: Pandas, NumPy, Matplotlib, Seaborn, Power BI, Tableau, Excel

Experience

Student Assistant, University Housing Operations April 2025 – Present
The University of Texas at Dallas *Richardson, TX*

- Handled 100+ weekly resident requests by logging maintenance tickets, resolving housing inquiries, and coordinating check-in/check-out workflows while maintaining accurate records in university housing systems
- Designed and maintained Excel based tracking systems using formulas and structured tables to manage room assignments and maintenance schedules for 800+ residents, improving reporting efficiency by 25%

Machine Learning Intern February 2024 – May 2024
HMI Engineering Services *Visakhapatnam, AP*

- Built a predictive maintenance prototype by cleaning and aggregating time-series sensor data, engineering failure related features, and training classification models using Python, pandas, scikit-learn, and SQL
- Analyzed model predictions to identify high risk equipment and worked with engineers to adjust maintenance thresholds, increasing average equipment uptime by 10%
- Developed failure trend visualizations and sensor drift analyses using Matplotlib and Seaborn to communicate degradation patterns across 6 months of aquafarm equipment data
- Contributed to an estimated 8% reduction in annual maintenance spend by enabling earlier interventions and fewer emergency repairs

Projects

Prompt Fuzzing Framework | *Python, LLMs, HTML* August 2025– December 2025

- Designed an automated data pipeline to generate adversarial prompt datasets, execute sandboxed LLM inference, and label outputs using context-aware safety classification and severity scoring
- Performed large-scale benchmarking of open-source LLMs (LLaMA, Mistral) across 186 curated prompts, producing structured metrics such as attack success rate and runtime efficiency while achieving $20\times$ faster inference through optimized batching and GPU-safe execution using LMStudio

Breathe Easy | *Python, Flask, JavaScript, HTML, CSS* December 2023 – April 2024

- Developed a convolutional neural network model using TensorFlow and Keras to predict pulmonary diseases by combining MFCC, Chroma STFT, and mel-spectrogram features, achieving 92% accuracy across 7 disease classes
- Built a web-based diagnostic tool with HTML and CSS interface for uploading lung sounds and receiving real-time probabilistic disease classifications, reducing preliminary screening time to under 30 seconds compared to traditional 10-15 minute manual auscultation

Education

The University of Texas at Dallas May 2026
Master of Science in Business Analytics and Artificial Intelligence

Gayatri Vidya Parishad College of Engineering May 2024
Bachelor of Technology in Information Technology

Leadership

Vice President April 2025 – Present
Telugu Student Association *Richardson, TX*

- Led end-to-end planning and execution of over 10 events, coordinating teams, managing timelines and stakeholders, and applying data-informed outreach strategies to expand participation to more than 1,000 international students