Aarushi Jugran

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Professional Summary

Detail-oriented Data Science graduate student skilled in Python, SQL, and statistical/ML modeling. Strengths in data wrangling, feature engineering, and visualization; experience across AI, simulation, and database optimization with a focus on pragmatic, data-driven impact.

Education

University at Buffalo (GPA: 4.0/4.0) — Buffalo, NY
M.S. Data Science and Applications — *Dec 2025*

- **Coursework:** Probability and Data Analysis, Database Management Systems, Python for Data Scientists, Statistical Data Mining, Numerical Analysis, Cybersecurity and Ethics, Machine Learning, Deep Learning.

Sri Venkateswara College, University of Delhi (GPA: 3.2/4.0) — New Delhi, India
B.S. (Hons) Mathematics — *May 2023*

- **Coursework:** Calculus, Algebra, Statistical Methods, Real Analysis, Differential Equations, Probability, Group Theory, Multivariate Calculus, Applied Statistics, Metric Spaces, Mathematical Finance.

Technical Skills

Programming & Frameworks: Python, SQL (Postgres, MySQL), R, PySpark, Docker
Deep Learning & ML: TensorFlow, PyTorch, Keras, Scikit-learn, XGBoost, LightGBM
Data & Visualization: Pandas, NumPy, Matplotlib, Power BI, Tableau, Streamlit, Gradio
Generative AI & LLMs: Hugging Face, RAG, FAISS, SpaCy, XAI, Generative AI
Large-Scale Systems: Hadoop/MapReduce, ETL pipelines, petabyte-scale processing

Experience

Sri Venkateswara College — New Delhi, India
Research Intern — *Jul 2021 – Nov 2021*

- Conducted socio-economic analysis of individual carbon footprints and climate impacts.
- Performed sector-wise statistical and regression analysis on data from 194 households.
- Presented findings at ICCCIGE-2021 (International Conference on Climate Change).

Projects

Gen AI in Education: Data Challenge — *Python, Gen AI, NLP, DL* — Buffalo, NY

- Engineered an NLP pipeline with Python, TensorFlow, and Hugging Face for prompt generation and summarization, increasing dataset diversity by 30% and annotation precision to 90.2% Got an honorable mention for the insights provided to the jury team

AI Radiology Report Summarizer — *RAG, RNN+Attention, Clinical NLP* — Buffalo, NY

- Built a retrieval-augmented RNN with attention to summarize chest X-ray reports using TF-IDF-based chunk retrieval and a custom tokenizer Integrated XML parsing and GRU-based modeling on the OpenI dataset Deployed via Streamlit for real-time image-linked summarization

Autoencoders for Anomaly Detection — *PyTorch, Sklearn* — Buffalo, NY

- Built and tested autoencoder architectures for anomaly detection in time-series data. Reconstruction error distributions evaluated to identify irregular patterns.

VGG-16 vs ResNet-18 Comparison — *CNNs, Transfer Learning* — Buffalo, NY

- Trained VGG-16 and ResNet-18 from scratch with hyperparameter tuning and regularization. Benchmarked performance across accuracy and efficiency metrics and visualized results with plots.

Autism Mutation Detection — *Python, Kipoi, PyTorch, Sklearn* — Buffalo, NY

- Developed a deep learning framework using DeepSEA to assess regulatory effects of noncoding variants in ASD and filtered de novo variants from denovo-db, computed variant effect scores, and prioritized high-impact mutations for follow-up.

Deep Learning for Network Traffic & Cybersecurity Analysis — *PyTorch, Sklearn, Plotly* — Buffalo, NY

- Implemented anomaly detection on NSL-KDD/KDD'99 datasets using autoencoders, LSTMs, and Transformer-based models and evaluated with reconstruction error thresholds, ROC-AUC, and Precision-Recall curves to identify malicious traffic.

Certifications

- **Microsoft Power BI Desktop for Business Intelligence (2023)** — Link
- **SQL — MySQL for Data Analytics and Business Intelligence** — Link