Jahnavi Ashok

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SUMMARY

Data Scientist with 3.5 years of software engineering experience, skilled in Python, SQL and C++. Experienced in machine learning, predictive analytics, and graph-based models, with a strong background in cloud platforms, data pipelines, and Agile delivery.

EDUCATION

University of Texas at Arlington | *MS., Data Science* **(GPA: 4)**   **Aug 2024 - 2024**

TECHNICAL SKILLS

- **Languages & Libraries:** Python, SQL, R, C++, Pandas, NumPy, Matplotlib, Scikit-learn, TensorFlow, Keras, PyG
- **Machine Learning & AI:** Supervised/Unsupervised Learning, Deep Learning, Graph Neural Networks
- **Cloud & Distributed Systems:** AWS, Azure, Distributed Validation Systems
- **Tools & Platforms:** Linux, Git, Docker, Kubernetes, Visual Studio, Power BI, Streamlit, Jupyter
- **Frameworks & Databases:** Spark, MySQL

WORK EXPERIENCE

University of Texas at Arlington   **May 2025 - Present**
Graduate Research Assistant   *Arlington, United States*
Graduate Research Assistant Arlington, United States

- Formulating a physics-informed ML framework to model soil water retention curves from soil texture data (~660 samples).
- Implementing hybrid models that combine physics-based baselines with Gaussian Processes and Neural Networks, reducing prediction error by ~20% compared to empirical fits on SWRC (660+ samples).
- Applying feature engineering to improve training efficiency by 25% and reduce overfitting in cross-validation.
- Leveraging evaluation metrics (RMSE, MAE, R^2) and k-fold cross-validation (5–10 folds) to benchmark models with $R^2 > 0.85$, ensuring improved generalization and interpretability.

Western Digital   **Jan 2021 - Jul 2024**
Sr. Software Engineer   *Bangalore, India*

- Progressed from Intern to Senior Software Engineer in 3.5 years, leading validation and automation initiatives for NVMe protocol based SSDs across 4+ product lines
- Contributed to the prototyping and validation of NVMe protocol-based storage devices, accelerating firmware testing cycles by ~15% and improving test coverage in Agile/Scrum teams.
- Engineered a Python-based UI integrated with low-level C++ device drivers via Boost.Python, cutting manual intervention by 80% and enabling end-to-end test automation for daily regression suites.
- Designed and implemented enhancements for NVMe command support based on evolving product requirements, increasing validation efficiency by 15%.
- Replaced direct device queries with a database-backed framework, cutting system load and improving performance by 20%.
- Extended internal tools for multi-controller support, expanding automation coverage by 50% and scaling testing capacity.
- Accelerated data retrieval with lazy tree-loading, increasing tool speed by 40%.

RELEVANT PROJECTS

Well Log Prediction using LSTM + GCN   **Aug 2025**
University of Texas at Arlington   *Arlington, united states*

- Developed a hybrid LSTM + GCN model to predict resistivity from gamma ray and porosity across 142 wells.
- Generated multiplex graphs using Spearman correlations to capture dependencies and improve predictive accuracy.
- Fine-tuned the model with Optuna hyperparameter tuning and regularization, achieving ~30% error reduction and $R^2 > 0.8$ on test wells.
- Built Python pipeline for preprocessing, training, and evaluation, supporting real-time inference and visualization.

Soil Saturated Hydraulic Conductivity (Ksat) Prediction - UTA Datathon Winner   **Apr 2025**
University of Texas at Arlington   *Arlington, united states*

- Architected an end-to-end ML pipeline with modular Python code for predicting soil Ksat, achieving 97% accuracy.
- Engineered features from multi-source soil datasets and tuned hyperparameters using cross-validation.
- Configured scalable preprocessing modules and automated evaluation over 50 randomized trials to ensure robustness.
- Deployed via Streamlit with Docker for real-time, user-friendly predictions.

LEADERSHIP & ACTIVITIES

Data Organization @UTA | *Vice President*   **Aug 2025 - Present**

- Organize events, workshops, and student engagement initiatives.