Akshay Paralikar

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Education

New York University, New York **GPA: 4.0** | Sept 2023 - May 2025
Master of Science, Electrical Engineering.
Relevant Coursework: Deep Learning, Advanced Python for Data Science, High-Performance ML, ML for Cyber Security, MLOps

Veermata Jijabai Technological Institute, Mumbai, India **GPA: 8.11/10** | Aug 2016 - Sept 2020
Bachelor of Technology, Electronics and Telecommunication Engineering

Technical Skills

Programming: Python, R, C, C++, SQL, PySpark, Hadoop, MATLAB, Numpy, Pandas, Scikit-Learn, PyTorch, TensorFlow, CUDA
Data Analytics: SVM, k-means, XGBoost, Hypothesis Testing, A/B Testing, LLMs, Time-Series Analysis, Jupyter, RNNs, LSTMs
Software Tools: Azure Databricks, Azure Data Factory, Microsoft Excel, GitHub, PowerBI, Tableau, Grafana, Hive, Docker

Experience

Sensor Engineer: *Floodnet,* New York City, United States Apr 2024 - Dec 2024

- Created a comprehensive NYC-wide flood sensor health monitoring autonomous system for time series data analysis for 200+ IoT flood sensors for a $7 million city-wide flood sensing initiative. Reduced downtime by 30%
- Devised filters and machine learning models for noise filtering and accurate flood detection improving accuracy by 6%
- Collaborated with interdisciplinary teams and contributed to product roadmaps for system enhancements

Data Science Consultant: *Fractal Analytics*, Mumbai, India Sept 2020 - July 2023

- Employed advanced analytics on big data with Python and PySpark on Azure Databricks improving performance by 5%
- Conducted exploratory analysis and designed ETL pipelines on Azure Data Factory for data processing from ingestion to reporting, utilizing Cloud Computing and resulting in a 15% reduction in overall processing time while enhancing reliability
- Worked on model building, model validation, model deployment, and cloud deployment for the AI/ML solutions

Projects

Efficient Vision Transformers: Once-Train Optimization: *New York University.* Sept 2024 - Dec 2024

- Developed a once-trained (OT) network framework for Vision Transformers (ViTs) to enable efficient deployment across diverse hardware platforms, utilizing FlashAttention, Neural Architecture Search, Pruning, Distillation and Quantization
- Conducted in-depth profiling of GPU-accelerated applications to identify performance bottlenecks, memory usage patterns, and computational inefficiencies along with benchmarking to methodologies to measure inference performance
- Achieved a model with 95% fewer parameters and 75% lower memory used for just a 12% drop in accuracy on CIFAR-100

Continual Learning for Autonomous Vehicles: *New York University.* Jan 2024 - May 2024

- Developed a CNN continual learning system for autonomous vehicle steering control using lifelong learning techniques
- Formulated a novel method of Temporal Consistency Regulation with a balanced buffer to enhance prediction accuracy along with smoothness of drive reducing mean square error by 18% while also reducing memory used by 25%
- Implemented VisualBackProp to visualize the important features from the image that are utilized in predictions

Complete Market Solution for Fast Moving Consumer Goods: *Fractal Analytics.* Nov 2022 - July 2023

- Built Machine Learning models for calculating the effects of Innovation of new products into the market, demand transference due to delisting of products, and renovation of products with more than 70% accuracy
- Predicted annual sales of products using Random Forest Regression and NLP with 84% accuracy
- Combined with the pricing tool to create interactive dashboards, simulators, and optimizers to visualize the model outputs and calculate forecasts giving product recommendations and enabling fact-based decision-making

ROI calculation based on Bayesian Belief networks: *Fractal Analytics.* Jun 2021 - Dec 2021

- Computed feature impact of different variables like Price, Discount, Advertising, and Seasonality on the sales of products, ascertaining which parameters, directly and indirectly, affect sales using Bayesian Belief Network modeling in R
- Utilized model coefficients to calculate the Return on Investment (ROI) for the advertisement media using statistical methods
- Built multiple tools for investment optimization resulting in a 7% increase in ROI

Honors and Certifications

Star Award - Eureka category for developing an innovative solution, *Fractal Analytics* Aug 2022
Microsoft Certified: Azure Data Engineer Associate May 2021
Winner AI Hackathon, *Symbiosis Institute of Technology, Pune* Sept 2019