Nikhila Madhunala

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Professional Summary

Machine Learning Engineer skilled in experimentation, forecasting, and Bayesian inference with Python, Scala, and R. Experienced deploying models on AWS and BigQuery. Designs rigorous experiments, builds scalable ML systems, and translates data insights into measurable business outcomes.

Education

Master's in Business Analytics
University of North Texas, Denton, TX – December 2024

Bachelor of Technology in Computer Science
CMR College of Engineering and Technology, India – August 2021

Technical Skills

Programming: Python, Scala, R, Java, SQL, TensorFlow, PyTorch, NumPy

Data Engineering: Data mining, model deployment, distributed systems, data pipelines

Databases: BigQuery, Amazon Redshift, Snowflake

Cloud: Google Cloud Platform (BigQuery, Dataflow), Amazon Web Services (AWS Glue, S3, Redshift)

DevOps: Git, CI/CD, Docker, Kubernetes, MLflow

Analytics/ML: Machine learning, regression, forecasting, Bayesian inference, A/B testing, computer vision, reinforcement learning

Practices: Communication, leadership, observability, optimization, presentation skills, problem solving, reliability, prototyping, research

Professional Experience

Machine Learning Engineer Intern
Next Era Path *Feb 2025 – Present*

- Designed Bayesian inference models to forecast demand. Improved forecast accuracy by 25% and reduced inventory costs, enabling smarter planning decisions and strengthening trust in ML outputs for operational use.
- Planned and executed statistically rigorous A/B experiments across platforms. Generated actionable insights that improved product conversion rates by 12% and informed roadmap priorities with measurable business impact.
- Developed reusable Python and R experimentation libraries. Empowered analysts to run experiments independently without engineering support, streamlining workflows and improving team productivity across functions.
- Presented experimentation outcomes and recommendations to executive stakeholders. Simplified complex statistical outputs into clear, actionable strategies that influenced leadership decisions and product vision.

Machine Learning Engineer
Infosys (Client: Westpac) *Jan 2021 – Dec 2022*

- Implemented distributed training pipelines on Spark and Hadoop. Reduced processing time from hours to minutes while enabling terabyte-scale data handling, improving scalability and performance in ML workflows.
- Deployed production ML models using GCP AI Platform and Cloud Functions. Achieved 99.5% uptime with low latency predictions, ensuring reliability and consistent performance for end-user-facing applications.
- Automated ingestion and feature generation workflows using Airflow and Dataflow. Reduced manual preparation time by 50%, increasing engineering efficiency and improving data pipeline reliability for ML systems.

- Designed CI/CD and observability practices for deployed systems. Enhanced reproducibility, ensured stable release cycles, and improved transparency across the ML model lifecycle in production environments.

Machine Learning Engineer Intern
Powersoft Global Pvt Ltd *May 2020 – Aug 2021*

- Partnered with marketing and product teams to align ML outputs with business objectives. Provided insights that directly informed strategic decisions, demonstrating strong collaboration and leadership skills.
- Communicated statistical concepts and ML findings to cross-functional stakeholders. Translated technical insights into business terms, improving alignment and increasing adoption of ML-driven strategies.
- Mentored analysts and engineers on best practices for experimentation, forecasting, and model deployment. Strengthened team maturity and built organizational capability in applying ML to solve complex problems.
- Shared research results through internal workshops and external forums. Enhanced visibility of ML initiatives and established organizational reputation for rigorous, data-driven decision-making practices.

Projects

Capstone: Predicting Vehicle Recalls from Complaint Data Aug 2024 – Dec 2024
Inherited fragmented data pipelines across AWS, Azure, and GCP that caused duplication of effort. Consolidated infrastructure into unified pipelines for training and deployment. Delivered a single platform that improved scalability and reduced maintenance costs.
Implemented CI/CD pipelines integrating Kubeflow and MLflow for continuous training and deployment cycles. Automated testing, validation, and release approvals. Significantly shortened model release cycles and increased business agility.
Drove adoption of observability practices by integrating monitoring with Prometheus and Grafana. Enabled teams to proactively track model drift and infrastructure health. Reduced time-to-detect and resolve issues, enhancing reliability.
Acted as a mentor for engineers transitioning into MLOps roles. Provided hands-on guidance in containerization, distributed computing, and cloud cost optimization. Built a knowledge-sharing culture that elevated overall technical maturity.