Nikhila Madhunala

nikhilamadhunala01@gmail.com | 304-460-5482 | linkedin.com/in/nikhila-madhunala

Professional Summary

Machine Learning Solutions Architect with expertise in NLP, distributed systems, and cloud architectures. Skilled in Go, Scala, and PyTorch, with proven success delivering ML pipelines and end-to-end solutions on AWS and Azure that align with business strategy.

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: Go, Scala, Python, Pytorch, Java

Data Engineering: Data mining, distributed systems, model training

Databases: PostgreSQL, Snowflake

Cloud: Amazon Web Services (S3, Redshift, Lambda), Microsoft Azure (Synapse, Azure Functions)

DevOps: MLOps

Analytics/ML: Machine learning, deep learning, natural language processing

Practices: Collaboration, communication, leadership, mentoring, optimization, reliability, research

Professional Experience

ML Solutions Architect Intern
Next Era Path *Feb 2025 – Present*

- Architected scalable NLP pipelines for document search and summarization. Improved result relevance while reducing query latency, ensuring millions of documents could be processed efficiently for end users in production.
- Led multiple text mining initiatives targeting unstructured datasets. Delivered insights that influenced product strategy and roadmap priorities, demonstrating the business impact of advanced natural language processing.
- Mentored engineers on NLP methods and cloud-based ML deployment strategies. Fostered knowledge growth and stronger cross-team collaboration while raising overall technical maturity across engineering functions.
- Presented NLP architecture and outcomes to executive leadership. Translated technical details into business strategy, building stakeholder trust and support for continued investment in advanced AI initiatives.

ML Solutions Architect
Infosys (Client: Westpac) *Jan 2021 – Dec 2022*

- Designed distributed training clusters leveraging Horovod on Kubernetes. Enabled efficient scaling across nodes and reduced training cycles by 35%, improving productivity and supporting training of larger, complex ML models.
- Built resilient ingestion pipelines powered by Kafka and Spark Streaming for distributed ML workloads. Prevented data loss, increased pipeline throughput, and ensured consistency across production ML systems at scale.
- Collaborated with product owners to align distributed ML system requirements with customer needs. Ensured technical outcomes supported direct business objectives and delivered measurable customer-facing impact.
- Conducted team workshops on distributed ML workflows and Kubernetes-based orchestration. Improved cross-team knowledge, enabling engineers to handle large-scale ML training tasks with improved efficiency and reliability.

ML Solutions Architect Intern
Powersoft Global Pvt Ltd *May 2020 – Aug 2021*

- Integrated ML models into mission-critical applications across AWS and Azure. Deployed multi-region redundancy for high availability and minimized downtime across global workloads.
- Architected cloud-native fault-tolerant pipelines that ensured consistent data ingestion. Leveraged managed cloud services to simplify scaling, monitoring, and infrastructure reliability across production environments.
- Guided teams through architecture reviews and best practices for ML system reliability. Ensured technical decisions aligned with organizational objectives and compliance requirements across cloud platforms.
- Optimized ML services for scalability and operational reliability in production. Enabled secure, reproducible deployments and reduced long-term overhead by standardizing ML architecture patterns across teams.

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.