Marie Lou Panthagani

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Education

New York University, Courant Jan 2024 – Dec 2025
Master of Science in Computer Science *New York City, New York*

- **Grading Assistant:** Basic Algorithms, Software Engineering and Web Design
- **Relevant Coursework:** Cloud and Machine Learning, Computer Vision, Predictive Analytics, DevOps

Acharya Nagarjuna University, Bapatla Engineering College Aug 2019 – May 2023
Bachelor of Technology in Computer Science and Engineering *Bapatla, Andhra Pradesh*

- **Relevant Coursework:** Data Structures and Algorithms, Prob.& Statistics, Computer Networks

Technical Skills

Languages: Python, C++, C, Java, JavaScript, Rust, Golang
Databases: PostgreSQL, MongoDB, AWS DynamoDB, Google BigQuery
Cloud & DevOps: AWS, GCP, CI/CD, Docker, Kubernetes, Git Linux
Big Data & Visualization: Apache Spark, Hadoop, Kafka, Airflow, Fivetran, Stitch Data, Power BI, Tableau
Software: Node.js, React.js, Typescript, React-Native, Express, Flask, Taipy, Spring, TensorFlow, PyTorch, LangChain
Others: AWS SageMaker, Databricks, Gen AI, LLMs, Redis, SanpAR, Lenstudio

Experience

Exposys Data Labs May 2023 – Dec 2023
Data Engineer *Bangalore, Karnataka*

- Built and optimized SQL-based ETL pipelines with Python, Airflow, and low-code tools (Fivetran/Stitch) to ingest 50K+ daily JSON/XML records into a centralized data warehouse for ML and analytics
- Boosted pipeline and dashboard performance by 30% through SQL tuning, data partitioning, and schema/lineage documentation to ensure reliable downstream analytics.
- Deployed production pipelines for a recommendation model, delivering real-time metrics to client dashboards.

Exposys Data Labs May 2022 – Aug 2022
Data Science Intern *Bangalore, Karnataka*

- Built Power BI dashboards to visualize sales and engagement KPIs, improving resource allocation and decision-making.
- Developed churn prediction models (Logistic Regression, Random Forest in Python/SQL) on 100K+ customer records, automating preprocessing (Pandas, NumPy) and cutting manual reporting by 40%.

Projects

Pico-LLM | *PyTorch, RoPE, RMSNorm, KV Caching, LSTM, K-Gram MLP* | Link

- Built decoder-only Transformers with RoPE, KV caching, and custom variants (K-Gram MLP, LSTM) on TinyStories and custom datasets.
- Implemented top-p sampling, greedy decoding, and micro-batching to improve scalability and generation efficiency.

Improved State Space Models for Computer Vision | *Vision Mamba, SE Blocks, MobileNetV2, ConvNeXt* | Link

- Enhanced Vision Mamba with SE blocks, MobileNetV2 layers, and pruning to boost efficiency.
- Achieved +8% accuracy on CIFAR-10/100 via Sliding Window Attention, Relative Attention, and ConvNeXt upgrades.

Cloud-Based Adversarial Defense for Robust ML | *Kubeflow, GCP, GKE, Prometheus, Grafana* | Link

- Designed adversarial training pipelines on GCP with Kubeflow, improving robustness to PGD attacks by 76.2% and reducing cycle time by 40%.
- Automated containerized deployment with real-time monitoring on GKE using Prometheus/Grafana.

Academic Research

New York University Aug 2025 – Present
Research Assistant *New York City, New York*

- Conducting research on multi-modal ML models to predict patient response to autoimmune and cancer combination therapies using genomics, biomarkers, lifestyle, and clinical history.
- Integrating public datasets (ImmPort, GEO, NHANES, UK Biobank, SEER) into unified patient profiles to enable therapy-outcome prediction and personalized treatment strategies.