Luis Tupac

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Professional Experience

General Motors (GM) – Roswell, GA

Senior Software Engineer & Operations Owner - Platform Engineering | Dec 2025 - Present
- Lead technical planning and execution for the developer platform, defining project roadmaps, technical approaches, and comprehensive documentation to guide the development lifecycle.
- Serve as primary technical liaison between platform engineering and external product teams, managing expectations and driving solution delivery for critical integration projects.
- Built secure, role-aware LLM agents with prompt hardening and human-in-the-loop guardrails for safe and auditable database interactions.
- Develop cloud-agnostic tools (Next.js, Golang) and manage containerized deployments on AKS while overseeing system architecture and resource provisioning strategies.
- Maintain SLOs and system health while leading incident response and identifying opportunities for platform optimization.

Software Engineer – Platform Engineering | Dec 2024 – Dec 2025
- Led design and implementation of GM's first Internal Developer Platform, reducing developer onboarding and time-to-production by abstracting cloud infrastructure complexities.
- Built a cloud-agnostic FinOps platform that provided visibility into multi-cloud spend, automated cost optimization recommendations, and reclaimed unused resources.
- Streamlined Azure resource provisioning by reducing approval workflows from multiple departments to a single integrated platform approval.
- Served as Operations Owner / Technical Lead: owned infrastructure, guided monorepo strategy for Next.js, and set technical direction for Golang, Python, and other frameworks within the platform.

Software Developer – Backend, Cloud Data Services | Jul 2022 – Dec 2024
- Maintained and scaled GM's enterprise data lake, supporting ingestion from 3rd-party vendors and internal departments via GoldenGate, Fivetran, and custom services.
- Designed the Databricks Loader (Java + Spring Boot) to migrate on-prem data to the cloud, automating workflow creation for data engineers and non-technical users.

- Replaced a costly proprietary encryption service with an open-source Spark-native deterministic encryption algorithm, improving cloud performance (90% latency reduction) and saving $3M annually.
- Migrated large-scale workloads from YARN to Kubernetes, maintaining clusters and orchestrating production jobs.

Data Engineer | Mar 2021 – Jul 2022
- Built data pipelines and models using SQL, PySpark, Python, and Azure Databricks, delivering curated data across bronze/silver/gold layers.
- Partnered with cross-functional teams (data scientists, PMs, product owners) to deliver insights, primarily for Customer Experience initiatives driving revenue via digital interactions and call center optimization.

Education

Master of Science in Analytics |Georgia Institute of Technology | 2023 – 2025
- Specialized in Deep Learning & Time Series Analysis.

Bachelor of Science in Computer Science | Georgia Southern University | 2016 – 2020
- Minor in Mathematical Sciences

Technical Skills
- Cloud & Data: Azure, Databricks, AWS, GCP, Spark, PySpark, Hive, Hadoop, SQL, Kubernetes, Docker
- Programming: Python, Golang, Java (Spring Boot), Scala, R, TypeScript, JavaScript, Shell.
- Web & Platform: Next.js, React, Remix, Node.js, Slack Bots.
- ML/AI: PyTorch, PyTorch Lightning, scikit-learn, NLP, Time Series, CNNs, OpenAi
- Databases: PostgreSQL, Oracle, SQL Server, NoSQL.
- Other: Power BI, GitHub Actions, ADO, CI/CD, FinOps.

Selected Projects
- **Market Risk Scoring System (Capstone with Ned Davis Research)** - Engineered an end-to-end risk prediction platform combining NLP (FinBERT, Word2Vec, HDBSCAN) and time series modeling to forecast S&P 500 inflection points. Architected scalable data backend using medallion architecture with DuckDB integration, delivering actionable risk scores for investment decision-making with Ned Davis Research proprietary data.
- f**astMRI with Meta AI -** Reconstructed undersampled MRI scans using U-Net for image-space prediction and V-Net for k-space reconstruction. Applied ROI-weighted loss functions to improve accuracy in critical anatomical regions and integrated cold diffusion (deterministic degradation) to enhance reconstruction quality beyond Meta's baseline implementation.