

Luis Tupac

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Professional Experience

General Motors (GM) – Roswell, GA

Software Engineer – Platform Engineering | Jan 2025 – Present

- 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.
- Owned PII detection and encryption pipelines leveraging regex and ML, ensuring compliance across sensitive data sets.
- 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.
- Acted as a consultant for business teams, handling full-stack data needs from 3rd-party API ingestion (e.g., Sterling mailboxes) to Power BI reporting and data lineage tracking.
- 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

Georgia Institute of Technology – Atlanta, GA

Master of Science in Analytics | 2023 – 2025

- Specialized in Deep Learning & Time Series Analysis.
- Projects:
 - fastMRI (with Meta AI): Applied CNNs and ROI-weighted U-Nets for MRI reconstruction.
 - Behavioral Finance (with Ned Davis Research): Created NLP + time series-based market risk score for S&P 500 inflection points.
 - Enron Fraud Detection: Built graph-based models from email networks to detect anomalies.
 - Applied NLP: Sentiment analysis and clustering for financial filings and news.

Georgia Southern University – Statesboro, GA

Bachelor of Science in Computer Science | 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, SEIR Models.
- Databases: PostgreSQL, Oracle, SQL Server, NoSQL.
- Other: Power BI, GitHub Actions, ADO, CI/CD, FinOps.

Selected Projects

- Pandemic Flu Spread Simulation (Python, SEIR model) – Built differential-equation-based SEIR models using CDC datasets to simulate pandemic vaccination outcomes; developed an interactive Python dashboard for scenario exploration.
- Deep Learning Spring '25 (PyTorch, CNNs) – Designed and trained convolutional networks for image classification tasks, leveraging PyTorch Lightning to optimize reproducibility and model performance.
- Team TRiBX Final Report – Collaborated in a team to integrate ML models into data-driven testing, applying rigorous evaluation methodologies and delivering results in a professional research-style report.
- OMSA Practicum (Spring '25) – Delivered an end-to-end analytics solution for a client project, applying statistical modeling, ML, and visualization to generate actionable insights for business decision-making.