Frank M. Gonzales, P.E., M.S.E.E
Orange, CA | (657) 749–3122 | mrftt@yahoo.com

Senior Analytics Engineer | Data & Analytics Leader

Data-driven engineer with 20+ years of experience translating complex requirements into actionable insights. Proven track record in building scalable data pipelines, architecting cloud-based analytics platforms, and delivering high-impact data products that empower stakeholders across engineering, product, and operations. Adept at SQL, Snowflake, dbt-style modeling, Python, and cloud platforms (AWS, GCP, Azure). Recognized for clarity, collaboration, and driving innovation at the intersection of data, engineering, and business strategy.

I. CORE COMPETENCIES

- Data Engineering & Analytics: SQL, Snowflake, dbt, Python (NumPy, Pandas, Scikit-learn)
- Cloud Platforms: AWS, GCP, Azure | Data Warehousing & Lakehouse Architectures
- Data Modeling: Star/Snowflake schemas, ETL/ELT pipeline design, geospatial & time-series analytics
- Tools & Systems: Docker, Git, Hadoop, ETAP, PSS/E, CYME, Streamlit
- Advanced Analytics: Machine Learning, Forecasting, Predictive Modeling, GenAI Applications
- Leadership: Cross-functional collaboration, project management, stakeholder engagement

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II. PROFESSIONAL EXPERIENCE

Senior Engineer – Data & Analytics, Southern California Edison
2022 – 2025

- Designed and maintained Snowflake-based data pipelines to perform load profile and geospatial analytics supporting electrification planning.
- Developed Streamlit applications integrated with Snowflake to deliver self-service analytics for business users.
- Implemented data validation workflows ensuring reliability and accuracy across large-scale grid datasets.
- Partnered with Product and Customer Insights teams to deliver actionable data products that supported early electrification initiatives.
- Optimized data pipelines and geospatial models for performance and scalability.

Senior Engineer – Grid Analytics & Machine Learning, Southern California Edison
2015 – 2022

- Technical Lead, EPIC II & III projects: developed hazard and storm impact prediction models leveraging ML to forecast equipment failures.
- Administered and optimized a Hadoop cluster for advanced analytics workloads.
- Built load forecasting models integrated into enterprise grid analytics platforms.

- Created machine learning–based storm analytics tools, delivering proactive damage prediction and mitigation strategies.
- Developed enterprise data integration and business intelligence reporting pipelines.

Power System Planner – Data Architecture & Analytics, Southern California Edison
2008 – 2015

- Designed and optimized data warehouse architecture to support strategic planning and reporting.
- Delivered BI dashboards and analytics reports to stakeholders, enabling data-driven decision-making.
- Led cross-functional system engineering and enterprise-level analytics initiatives.

Engineer – Distribution & Substation Planning, Southern California Edison
2002 – 2008

- Built, analyzed, and optimized large-scale power system datasets, delivering insights for operational planning.
- Performed data-driven scenario analysis (N-1, contingency, VAR, and load forecasting).
- Supported grid operations during critical storm events with real-time analytics.

III. EDUCATION

- M.S., Electrical Engineering – University of Southern California, 2010
- B.S., Electrical Engineering – California State Polytechnic University, Pomona, 2002

IV. PUBLICATIONS

- Distribution System Planning for Growth in Residential EV Adoption, IEEE Transactions on Smart Grid, 2022
- Association Rule Mining for Localizing Solar Power in Distribution Feeders, IEEE Transactions on Smart Grid, 2020
- Advanced Data Analytics at SCE, DistribuTECH 2019
- Storm Impact Prediction Modeling in Distribution Power Systems, IEEE Transactions on Power Systems, 2019