

José Macías Silva

AI Engineer · Grid Operations

Aerospace-trained systems engineer building AI for the electric grid.

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EXPERIENCE

OG&E (Oklahoma Gas & Electric) — Grid Operations Engineering

Lead BA (operating as lead engineer, developing Nighthawk, an in-house web platform)

May 2017 – Present

- **Leading AI integration at OG&E.** Building the AWS-hosted LLM integration layer to connect Claude to operational data across ADMS modules (OMS / SOM / FLISR), CAD, and Resource Availability — API gateway, role-aware context manager, per-query audit logging. **Four production-bound LLM capabilities in flight: (a) Cause Code QA** — AI validates CAD notes against assigned cause codes; **(b) Switching Dashboard AI assist** — AI validates SOM switching entries against procedures; **(c) Resource Availability natural-language interface** — plain-language updates by non-technical users; **(d) Nighthawk AI BI** — anyone describes analytics needs; Nighthawk generates the dashboard. **Also author the labor-cost models and capital-justification artifacts** that translate each AI capability into a fundable work order — the bridge between AI engineering and capital approval that operations teams typically can't produce. Follow-on adds ML predictive insights (ETR, ADMS) and agentic-AI workflows under a four-tier governance framework I authored. Impact targets four pillars: **reliability** (SAIDI lever), **cost** (O&M reduction), **safety**, and **regulatory compliance**.
- **Designed and built the Resource Availability Suite**, an in-house enterprise web platform linked to OG&E's internal systems (Azure AD, ADMS, CAD), consolidating 5–7 fragmented scheduling sources into one source of truth. Built specifically to OG&E's operational process — change management is fast and adoption by adjacent departments is straightforward. Architected a four-strategy conflict-resolution algorithm with full audit restoration. **Modeled \$284K–\$310K annual O&M savings · 4,549 hours/year saved**; dispatch decisions reduced from **5–7 min to 30 sec (91% faster)**; **90% reduction in wrong dispatches**. External SI quoted **\$800K** for the same scope; delivered internally in **10 weeks for ~\$40K** (~\$760K savings vs. external quote).
- **Authored Nighthawk's 5-year platform roadmap** — the strategy for turning fragmented operational tooling into a unified AI-native platform. **Phase 1 (Foundation, complete)**: consolidated 8+ legacy tools under SSO with three-tier RBAC. **Phase 2 (in flight)**: production AI integration. **Phase 3 (2028–2030)**: autonomous agentic workflows. **Phase 4 (Enterprise vision)**: cross-organization platform extension. The pattern transfers to any operations-heavy company running on legacy systems.
- **Build complex analytics dashboards that translate operational data into business-critical decisions.** *Strategic Undergrounding Analytics* maps every overhead single-phase lateral on a Google Maps frontend and ranks each as an undergrounding candidate via a composite ROI / vegetation / reliability / infrastructure score (9+ installation-method cost models). *Operator Switching Dashboard* measures organizational safety through a peer-anchored MAD-based scoring model — pass-through percentage as the leading indicator of switch-order quality before field deployment. **Replaces anecdotal capital and safety decisions with data.**
- **Served as data SME on the ADMS upgrade**, validating future-state schema and data flow against five downstream consumers (Oracle, HANA, iDashboard, PowerBI, Nighthawk). Performing this scope internally rather than via contractors generated **\$49,031 documented cost avoidance**; zero-disruption cutover.
- **Modernized the Circuit Operations App** (SCADA operations + alarm management) from a legacy C# desktop application to a web application on the Nighthawk platform — removing per-workstation install dependency and expanding access from a handful of installed users to anyone on the OG&E intranet.
- **Presented "AI at OG&E — Transforming Grid Operations"** at the **Southeastern Electric Exchange (S.E.E.) DOCC Committee Spring Meeting** (April 2026) to peer utility leaders. Presented OG&E's three production applications built using the **seven-step AI-assisted development methodology**.

Parker Meggitt (formerly Meggitt Safety Systems) — Operations

S/OP Manager

Jan 2015 – Feb 2016

- Pioneered the organization's first Sales-Inventory-Operations Planning process for a **\$200M+/yr revenue line** across 10 product lines; led Kanban / PFEP implementation reducing inventory holdings while sustaining zero stockouts.

Operations Analyst

Apr 2011 – Jan 2015

- Designed and built a web-based BI platform serving **9 departments**; consolidated four ERP systems (SAP, JDE, Oracle, Quantum) into a single SQL data layer; authored 12-month rolling demand forecasts informing the 10-year strategic plan.

Earlier Aerospace Experience · 2009 – 2011

Pacific Scientific HTL (Program Analyst) · Pacific MultiTech (Program Analyst). Aerospace qualification test procedures, ROM / FFP proposals, sales pipeline forecasting.

SKILLS

LANGUAGES

Python · TypeScript · JavaScript · PHP · SQL · Java · C++ · C# · HTML / CSS · PowerShell · Bash · Go · Rust · Ruby · Swift · Node.js

AI / ML

Generative AI · Large Language Models (LLMs) · AWS Bedrock · Anthropic Claude models (API) · Model Context Protocol (MCP) · LLM application development · production LLM deployment & observability · LLM tool-use / function calling · context engineering · prompt engineering · LLM-driven document analysis (cause-code QA against CAD notes) · LLM-assisted natural-language interfaces · natural-language-to-dashboard generation · conversational AI · agentic AI workflow design · responsible AI & AI governance · AI integration architecture · predictive analytics

DATA / INFRA

MySQL · PostgreSQL · Oracle · SQL Server · SAP HANA · Snowflake · ClickHouse · Cassandra · data warehousing · data modeling · ETL / ELT pipelines · real-time data pipelines (Windmill) · Docker · Kubernetes (Tilt) · container orchestration · microservices architecture · cloud-native architecture · high-availability deployment · distributed systems · Apache · nginx · Linux server administration · AWS · Azure AD OAuth2 + Microsoft Graph · OAuth2 / OIDC · identity & access management (IAM) · REST API design · Google Maps JavaScript API · CI/CD (GitHub, Coder, Tilt)

BI / ANALYTICS

Built Nighthawk, an in-house BI + operations platform · natural-language-to-dashboard generation · AI-augmented dashboard development · custom KPI visualization · data visualization · time-series analytics · composite-scoring algorithms (multi-factor ROI ranking via SQL percentile rank) · cost-benefit modeling · reporting automation · self-service analytics design · KPI design & tracking · Alteryx · PowerBI · iDashboard

DOMAIN

Electric grid operations · transmission & distribution (T&D) operations · outage management systems (OMS) · SCADA · ADMS / FLISR · advanced metering infrastructure (AMI) · distribution automation · smart grid · reliability engineering (SAIDI / SAIFI focus) · capital planning & investment ranking · regulatory reporting (AR-PSC) · enterprise workforce scheduling · legacy system modernization · cross-system data integration · data governance & industry standards (AEIC, NATF) · GIS-based grid analytics · SIOP / S&OP · aerospace operations

EDUCATION

B.S. Aerospace Engineering · California State Polytechnic University, Pomona

Certificate in Management for Technical Professionals · University of California, Irvine