Kelly Southall
AI Architect | Senior Software Engineer | Generative AI & Intelligent Systems

SUMMARY

AI Architect and Senior Software Engineer with 20+ years of experience designing, building, and scaling enterprise-grade AI, machine learning, and software platforms across industrial, automotive, energy, life sciences, financial services, and technology sectors. Proven ability to translate complex business and operational challenges into robust, cloud-native architectures leveraging modern ML, LLMs, agentic systems, and data platforms. Deep hands-on expertise across Python-based ML stacks, distributed systems, digital twins, reinforcement learning, and MLOps, combined with strong software engineering discipline and production delivery rigor.

Known for architecting mission-critical systems, leading end-to-end solution design & collaborating effectively with product, engineering & business stakeholders. Equally effective in hands-on development and technical leadership roles.

CORE TECHNICAL SKILLS

AI / Machine Learning: Generative AI, LLMs, Agentic AI (CrewAI), Reinforcement Learning, Computer Vision, NLP, Predictive Modeling, Digital Twins, Optimization (MILP), Anomaly Detection

Software Engineering: Python, PySpark, REST APIs, Microservices, Event-Driven Architectures, Distributed Systems, Test Automation, CI/CD

Data & Platforms: Databricks, Snowflake, MLflow, dbt, Azure IoT Hub, Kafka, Hadoop, Spark, CosmosDB, Neo4j, SQL/NoSQL

Cloud & DevOps: Azure, GCP, Infrastructure-as-Code, Containerization, MLOps, Model Governance

Industrial & Embedded Domains: Industrial IoT, PLC Integration, Software-Defined Vehicles, Asset Performance Management, Robotics, Edge Computing

SELECTED ARCHITECTURE & DELIVERY HIGHLIGHTS

- Designed agentic AI architectures automating complex legal, industrial, and operational workflows using modern LLM frameworks.
- Architected software-defined digital twin platforms for automotive and industrial clients, integrating physics-based models with real-time telemetry.
- Built production-grade ML pipelines for predictive maintenance, energy optimization, and computer vision–based quality control.
- Delivered scalable, cloud-native AI systems with full MLOps lifecycle support-monitoring, retraining & governance.

EXPERIENCE

AI Architect / Senior Manager – AI & Data Science
Schneider Electric – Digital Hub | Austin, TX   **2022–2025**

Architected and delivered enterprise AI and software platforms across global industrial and technology clients while leading distributed teams of AI engineers and data scientists.
Key Contributions:

- Designed LLM-assisted analytics pipelines for asset failure detection and survivability modeling.
- Architected software-defined vehicle digital twin platforms using Databricks and cloud-native services.
- Led reinforcement learning–based optimization systems delivering multi-million-dollar annual energy savings.
- Designed computer vision and robotics software architectures automating manufacturing and recycling workflows.
- Built LLM-driven PLC code conversion & automated test generation frameworks, reducing delivery cost by 75%.
- Provided technical architecture leadership for large-scale GPU and infrastructure reliability modeling.

Senior Manager, Data Science & AI Architecture
Accenture – Applied Intelligence | Austin, TX   **2021–2022**

Led architecture and engineering delivery for enterprise AI modernization programs across financial services, retail, and industrial clients.
- Architected claims severity prediction platforms using Python, Snowflake, MLflow, dbt, and modern ELT pipelines.
- Designed scalable inventory optimization & pricing systems integrating ML models with enterprise data platforms.
- Established engineering standards for ML deployment, testing, and lifecycle management.

Senior AI Architect & Data Scientist
Uptake Technologies   **2020–2021**

Designed and delivered advanced ML, digital twin, and asset performance management platforms for energy and industrial clients.
- Architected preventative maintenance and reliability optimization systems using cloud-native ML pipelines.
- Built graph-based asset investment models using Azure, CosmosDB, and Neo4j.
- Delivered explainable reliability & performance models to executive and engineering stakeholders.

Analytics & Chief Data Scientist (Co-Founder)
LTAnalytics   **2012–2021**

Founded and architected a smart-city and prop-tech analytics platform enabling hyper-local digital twins and behavior analytics.
- Designed end-to-end software & data arch spanning IoT ingestion, streaming, ML & visualization.
- Built optimization engines, segmentation models, and geospatial analytics pipelines.
- Delivered production systems for large-scale consumer and mobility clients.

Senior Data Science Architect
Blue Prism   **2019–2020**

Architected AI augmentation frameworks for enterprise RPA platforms, integrating ML, NLP, OCR, and forecasting into production automation systems.

Senior ML / Software Solutions Engineer
Alteryx | Lucidworks   **2017–2019**

Delivered enterprise-scale ML and search architectures using Spark, Hadoop, Kafka, and Python for Fortune 500 clients.

Lead Data Scientist / Architect
SAS Institute   **2010–2017**

Designed and delivered large-scale AI and analytics systems for global enterprises, contributing to core product architecture for model management and text analytics platforms.

CERTIFICATIONS & ADVANCED TRAINING

- MIT Professional Ed – Generative AI for Leadership
- Azure Data Scientist Associate
- DeepLearning.AI – Generative AI & LLM
- Databricks Spark Training

- Neo4j Advanced Graph Programming
- Certified Analytics Professional (CAP)
- Six Sigma Green Belt & Champion

EDUCATION

MBA, Oklahoma City University
BBA, Finance, University of Central Oklahoma