Michael L. Welles

Address: 38 Covert St, Brooklyn NY 11207 | Phone: 917-586-9218 | Email: mlwelles@gmail.com |
Strategic Impact & Execution at Scale: Technical lead for real-time flight telemetry platform processing thousands of sensors from commercial jet engines worldwide. Built streaming data infrastructure (Databricks, Spark, Python) powering fault detection and anomaly detection models that triggered automated alerts from emergency grounding to routine inspection—delivering measurable improvements in fleet reliability and maintenance efficiency. | Technical Excellence & System Design: Designed ML orchestration pipeline with comprehensive audit trails tracing every output to specific code versions. Implemented parallel model evaluation without added latency using async patterns and concurrent processing, ensuring system robustness and maintainability aligned with long-term business needs. | Operational Excellence & Team Enablement: Led "inner-source" initiative addressing common problems across 40+ teams: built SDKs for parsing proprietary data formats, quickstart kits for Databricks projects, and synthetic data generators. Established durable processes and standards that scaled with platform growth. | Organizational Leadership: Managed onboarding and migration support for teams adopting the platform. Set clear priorities across multiple domains, drove accountability mechanisms, and ensured predictable, high-quality delivery tied to company objectives. | Business Ownership & Execution: Partnered with Product to influence roadmap and drive end-to-end delivery of business-critical platform. Built backend with Go microservices on Kubernetes, federated GraphQL API, and Vue.js frontend—enabling core business operations from day one. | Technical Stewardship: Established architecture for regulated industry, ensuring system reliability, data integrity, and compliance with insurance regulations. Made principled technical decisions grounded in business goals and customer outcomes. | Team Health & Culture: Built inclusive, high-trust environment rooted in autonomy and accountability. Modeled constructive candor and transparent communication while growing team capability. | Multi-Team Leadership: Led execution across diverse technical domains, ensuring delivery quality through strong operational oversight and clear accountability mechanisms. | Process & Standards: Drove operational efficiency and continuous improvement by establishing scalable processes and engineering standards that raised the bar across teams. | Organizational Impact: Managed products including ePRO (iOS/Android), Patient Cloud (iOS), native SDK, wearables platform, and backend services. Launched two major initiatives and migrated all development to Swift and Kotlin. | Performance Improvement: Instituted organizational and process improvements that increased average team velocity by 2.5×, demonstrating measurable operational KPI improvements. | Cross-Functional Leadership: Led team of 20+ iOS, Android, and backend engineers, QA analysts, designers, and product managers. Evangelized agile best practices, CI/CD, and collaborative delivery. | Talent Development & Culture: Instituted engineering guild system for cross-office knowledge sharing and formal R&D sponsorship. One guild-led initiative generated new product proposal securing a $5M contract, demonstrating increased organizational impact-per-head. | Innovation & Technical Quality: Championed technology investigations, engineering blog, meetups, and open-source contributions. Directed projects including smart Bluetooth accessories with live streaming, game companion apps, and mobile commerce platforms. | Data Systems & Backend Architecture: Designed ML-driven ETL pipeline (Python, spaCy, NLTK, scikit-learn) with image recognition on AWS SageMaker. Built async data flow using AWS SQS/SNS for event-driven processing with DynamoDB, implementing retry logic, dead-letter queues, and idempotency. | Platform Engineering: Developed search API in Go against Elasticsearch indexes. Architected microservices with discrete transformation steps, packaged as Docker images and deployed via CI/CD to Kubernetes (managed with Terraform). | Technical Depth: Designed database schema for asset relationships and metadata, tuned queries for complex lineage traversal, and managed zero-downtime migrations. Cryptographic core written in Rust with Python and WebAssembly bindings. | Delivery Excellence: Ensured CI/CD validated compliance requirements on each release. Delivered all major milestones on time, successfully relaunching product for commercial and government clients.

Overview

Engineering leader with 15+ years building scalable platforms and data systems that serve millions of users. Proven track record leading multi-team organizations (managed 14 developers across three teams at Raytheon, 20+ engineers at Huge) and delivering strategic business outcomes through rigorous execution and operational excellence. Achieved 2.5× velocity increase at MediData while maintaining quality through strong technical oversight and disciplined processes. Deep expertise in backend services, data infrastructure, and real-time systems. I drive clarity across complex technical domains, elevate organizational talent, and partner effectively with Product and Design to maximize customer and business impact.

Core Technologies

Languages & Frameworks: Python, Go, Java, Rust, Typescript **Data & Infrastructure:** Databricks, Spark, PostgreSQL, DynamoDB, Elasticsearch, Kafka **Cloud & Platforms:** Kubernetes, Docker, AWS (SQS/SNS, S3, SageMaker), Azure, Terraform **Reliability & Operations:** CI/CD, distributed tracing, metrics/logging, SLOs/alerting, incident response **Backend Systems:** REST/GraphQL APIs, microservices, event-driven architecture, message queues

Experience

Director of Software Development, Raytheon Technologies

Sep 2021 - Nov 2023 · New York, NY

Led development of next-generation data platform for aerospace applications at Enterprise Data Services, managing 14 developers across three agile project teams while overseeing platform adoption for 40+ teams.

Head of Technology, Dayforward

Jan 2020 - Sep 2021 · New York, NY

Head of technology for life-insurance startup. Led small team that designed and built algorithmic underwriting and policy-management platform. Delivered complete system in under ten months, launching same day the company received regulatory approval.

Director of Software Engineering, UTC Aerospace Systems

Feb 2019 - Jan 2020 · Brooklyn, NY

Managed team of 17 engineers at the UTC Digital Accelerator. Oversaw multiple project teams from IoT sensors and mobile apps to design systems and developer tools. As frontend engineering director, led efforts to normalize, document, and evangelize engineering processes, standards, and best practices across the organization.

Director of Engineering (Mobile), MediData

Feb 2017 - Jan 2018 · New York, NY

Led engineering teams responsible for Patient Cloud platform, collecting clinical trial data from patients and clinicians via mobile devices and wearable sensors.

Principal Architect / Director of Mobile, Huge

May 2013 - Feb 2017 · Brooklyn, NY

Lead Engineer / Chief Technologist, Riverdrop

Jan 2018 - Feb 2019 · New York, NY

Led team of three senior engineers building specialized product search engine.

Principal Engineer, Istari Digital

Feb 2024 - Jul 2025 · New York, NY

Istari Digital enables zero-trust digital collaboration for cyber-physical systems. Led team building secure backend registry service (Python, FastAPI, SQLAlchemy, PostgreSQL) and SDK.

Senior Software Engineer – iTunes Store Video Workflow, Apple

Mar 2008 - May 2011 · Cupertino, CA

Senior engineer on team of five responsible for encoding and assembling all iTunes video media. Owned encoding toolchain for processing cluster, specified deliverable formats, developed validation suites, and created reference media for hardware compliance. Led two major workflow rewrites for HDTV launch and international expansion.

Manager of Mobile Technology, Consumer Reports

Jul 2011 - May 2013 · Yonkers, NY

Founded mobile applications group and built in-house team for iOS/Android development. Launched flagship ratings application and managed external vendors maintaining legacy app portfolio.

Education

Bachelor of Arts in History, The University of Chicago

Chicago, IL