Daniel Mejía Raigosa — Full-Stack Software Engineer — Applied AI & Cloud Architecture

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Summary

Physicist and Senior Full-Stack Applied AI Engineer with 8+ years of professional software development experience. Specialized in designing high-throughput backend systems in distributed cloud architectures (AWS/GCP), and Applied AI/ML pipelines including LLM orchestration, AI recommender systems, and ETL automated workflows. My scientific training paired with pragmatic engineering experience allows me to craft effective solutions to complex challenges meeting project requirements.

Technical Skills

Backend & Languages: Node.js, TypeScript, Go (Golang), Python, SQL, C/C++ (embedded), Shell (Bash)

Cloud & AWS Infrastructure: AWS (Lambda, API Gateway, DynamoDB, OpenSearch, Step Functions, S3, CDK), GCP (GKE, App Engine), Docker, Kubernetes (v1.21), Terraform, CI/CD (GitHub Actions, GitLab CI/CD)

Architecture & Protocols: Serverless Microservices, Multi-Tenant SaaS, Event-Driven Architecture, RESTful APIs, GraphQL (Apollo), FHIR Interoperability

Applied AI & MLOps: AWS Bedrock, Azure OpenAI, LLM Orchestration, NLP Classification Pipelines, MLOps Service Quality Metrics, PyTorch

Testing & Quality: Jest, Cypress, Pytest, Finite State Machines (XState), Automated Test Coverage

Databases, Search & BI: DynamoDB, PostgreSQL, OpenSearch / Elasticsearch, Redis, MongoDB, InfluxDB, Metabase

Frontend: React (v18+), TanStack Query, React Hook Form, Styled-Components

Professional Experience

TitanIntake **Remote**
Full-Stack Platform Engineer *2023 – 2026*

- Engineered core platform features across serverless microservices, AI/MLOps pipelines, and EMR interoperability layers for a high-availability, multi-tenant healthcare SaaS platform.
- Architected a Document Packets Engine managing custom AI-based document routing, PDF splitting, and atomic batch FHIR transactions across clinical lanes adapted to multi-tenant workflows.
- Integrated Applied AI and Document Intelligence workflows using AWS Bedrock, Azure OpenAI LLMs, and NLP classification pipelines for automated document processing, deploying a custom MLOps pipeline reporting service quality metrics.
- Architected an automated LLM evaluation framework to benchmark prompt variants and model swaps (e.g.,

GPT-4 vs. reasoning models), running repeated statistical trials (N runs) across custom MLOps metrics to optimize inference cost and classifier accuracy.
- Developed custom fuzzy matching algorithms and a multi-phase patient matching scoring engine to enforce high-confidence demographic resolution critical for patient care and deduplication.
- Managed and deployed scalable cloud infrastructure and analytics layers using AWS CDK, PostgreSQL, DynamoDB, OpenSearch, Metabase, and Node.js/TypeScript within an Nx monorepo, maintaining test suites across Jest, Cypress, and Python with Pytest.

Self-Employed / Various Clients **Remote**

Freelance Software Engineer & Consultant, My most impactful consulting: *2017 – 2023*

- **IoT & Telemetry Platform - ND (2021–2022):** Built a high-throughput GraphQL and RESTful telemetry ingestion API (Apollo GraphQL, Go, MongoDB, InfluxDB). Re-engineered performance-critical services in pure Go, achieving a 5x faster response times, with significantly lower memory footprint. (Stack: Node.js, Apollo GraphQL, Koa.js, Go, InfluxDB, MongoDB, DigitalOcean, Gitlab CI/CD)
- **Fintech Algorithm Auditing - ND (2022):** Diagnosed critical logical bottlenecks and numerical inaccuracies in core financial migration scripts (Python, Pandas).
- **FashionTech Startup - Bestlook (2019–2021):** Designed and maintained a multi-step web scraping and ETL data ingestion pipeline (Node.js, Elasticsearch, Redis) coupled with fine-tuned deep learning/ML clustering models (Go, Python, PyTorch) for automated apparel classification, designed an deployed a cloud-cost optimization strategy that created and destroyed cloud architecture on demand to reduce costs on idle resources. (Stack: Node.js, Puppeteer, express.js, koa.js, go, Pytorch, ElasticSearch, GCP Cloud, GKE (Google Kubernetes Engine), GCP Cloud Scheduler, GCP ComputeEngine, MongoDB Atlas, Gitlab CI/CD)
- **Agriculture Automation Platform - Altrac.io (2018–2019):** Increasing code testing coverage, migrated core backend processes using FSM (FiniteStateMachines) to guarantee determinism, implemented new telemetry endpoints to support new functions.(Stack: Node.js, express.js, MongoDB, XState)
- **Authentication & Computer Vision - ND (2018):** Implemented biometric authentication workflows integrating AWS API Gateway, AWS Rekognition, and AWS Lambda.(Stack: Node.js, express.js, AWS DynamoDB, AWS)

Education

Universidad de Antioquia **Medellín, Colombia**

B.S. in Physics *2017*

Emphasys in computational physics and simulations, complex systems modeling, and experimental muscle physiology.

Peer-Reviewed Publications

2021: **Mejía-Raigosa, D.**, et al. *"A new set of equations for the simplified calibration of fluorescence Ca2+ transients in skeletal muscle fibers."* **Journal of Muscle Research and Cell Motility**. DOI: 10.1007/s10974-021-09597-8

2013: **Calderon, Juan C. and Mejía-Raigosa, Daniel and Giraldo, Marco and Bolaños, Pura and Caputo, Carlo**, *"Calibration of Ca2+ Transients Obtained with the Fast Ca2+ and Mg2+ Dye Magfluo-4."* **Biophysical Journal**. DOI: 10.1016/j.bpj.2012.11.1635

Research & Computational Modeling

Universidad de Antioquia **Medellín**

Biophysics & Electrophysiology Researcher *2010 – 2021*

- Formulated a novel mathematical framework for calibrating intracellular fluorescence signals in mammalian skeletal muscle fibers.
- Developed high-performance computational simulations and HPC string-search algorithms in C++ for genomics and transcriptomics pipelines.

Languages

Spanish: Native — *Mother tongue*

English: Professional Fluent - C2 — *Certified Full professional working proficiency - Certified EF SET*