

J. Michael Brannigan

Principal ML/Data Engineer Cloud/Backend Architecture Agent-Assisted Engineering

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Remote, Hybrid, or SF Bay Area

Principal engineer focused on ML/data systems, backend architecture, and production-grade cloud systems. I turn ambiguous requirements, fragmented data, and operationally complex systems into documented, observable, low-cognitive-load software that teams can understand, extend, and trust. My working style is requirements-first and exemplar-driven: explicit constraints, acceptance criteria, tests, reviewable diffs, and human ownership of architecture, security boundaries, data modeling, production quality, and final output.

LLM-NATIVE ENGINEERING PRACTICE

- Use Claude Code and Codex as complementary coding agents for implementation, refactoring, debugging, review, and test generation.
- Use MCP/OpenRouter for complex multi-agent workflows: design exploration, red-team review, implementation planning, model comparison, and parallel analysis.
- Use Beads as the durable project decomposition and issue-tracking layer, replacing ephemeral TODOs with repo-local, reviewable task state.
- Retain human ownership of architecture, security boundaries, data contracts, production quality, deployment strategy, and final code quality. Requirements, exemplars, acceptance criteria, tests, and reviewable diffs drive the work; tight, controlled short-context sessions keep agent output scoped, auditable, and resistant to slop.

CORE STACK

ML/Data	PySpark, EMR, SageMaker, Databricks, Airflow, Kafka, Jupyter, CatBoost, MTCNN-derived inference, image/video indexing, vector search, embeddings, feature pipelines.
Backend	TypeScript, Python, Rust, Node.js, FastAPI, GraphQL, PostgreSQL/Aurora, DynamoDB, SQLite, S3 data lakes, API design, data contracts, monorepos.
Cloud/Ops	AWS, GCP, Azure, Terraform/CDKTF, Docker/ECS/Lambda, API Gateway, GitHub Actions, OpenTelemetry, XCP-ng, secure bastions, tunnels, bare-metal colo.

Recent work: production ML/data systems, agent-assisted development workflows, cloud architecture, compliance-sensitive data handling, and high-throughput ingestion/indexing.

SELECTED RECENT WORK

Loti · Principal / Founding Engineer

Aug 2024 – Present

ML inference · image/video ingestion · AWS · observability · data contracts

- Built ML inference and image/video ingestion systems processing up to 700,000 images/day, indexing social-platform content against Aurora/Postgres and DynamoDB.
- Built custom MTCNN-derived models for cosine-similarity matching and AI/deepfake content detection across Instagram, Facebook, Pinterest, TikTok, and YouTube.
- Unified fragmented data schemas and “data puddles” into documented interop contracts, improving dashboarding, reporting, and engineering workflow coherence.
- Operated complex multi-service pipelines with OpenTelemetry, Terraform CDKTF, ECS/Docker, API Gateway, GitHub Actions, Jest, and monorepo patterns.

SELECTED RECENT WORK, CONTINUED

Pareto Health · Data Team Lead / Senior ML & Analytics Engineer

Mar 2021 – Aug 2024

Healthcare data · ML · lake architecture · compliance-sensitive systems

- Built a from-scratch ingestion platform and 50+ TB S3/DynamoDB data lake for healthcare underwriting and supervised learning workflows.
- Automated manual Excel-based underwriting into an API-driven CRM adjunct, materially improving throughput and decision quality.
- Maintained strict PHI/PII segregation, tokenization, and HIPAA-sensitive data handling across dozens of ingest sources.
- Integrated ML predictions into legacy product systems using AppSync, GraphQL, TypeScript Lambda, EMR/Hadoop, PySpark, and CatBoost.

Little Caesars / Microsoft · Azure ML & DevOps Engineer

Mar 2020 – Jun 2020

Forecasting · Azure ML · Kafka · PaaS delivery

- Built a PaaS ML pipeline forecasting hourly “Hot-N-Ready” pizza demand across 3,500 global locations, integrating weather, events, and POS sales data via Kafka and Azure Functions.

Anonifi · Technical Co-Founder / CTO

Aug 2016 – Mar 2021

Fintech · privacy · alternative credit · backend/data architecture · hybrid cloud

- Built the web, mobile, server infrastructure, and data systems for a fintech/privacy platform creating alternative credit profiles from phone telematics and user-controlled PII.
- Designed hybrid infrastructure with on-prem XenServer coordination and burst capability to AWS, Azure, and GCP.

Expensify · Software Engineer

Feb 2018 – Jun 2018

Full-stack engineering · mobile · C++/SQLite · DevOps · React/PHP

- Engineer-at-large across mobile apps, C++/SQLite core, DevOps tooling, dashboarding, and PHP/React backoffice systems; contributed to Project 10X scale-out work ahead of a national media campaign.

Sony PlayStation · Senior UI Architect

Jun 2015 – Jul 2016

Streaming media · JavaScript · AngularJS · Node.js · React prototype

- Modernized PlayStation Vue UI systems from extJS/jQuery to AngularJS/HTML5/CSS3; built a high-performance Node.js IP geolocation service and prototyped React re-architecture.

PERSONAL PROJECTS

Vector Panda · Rust Vector Database / Query Engine

May 2025 – Present

Rust · vector search · agent-assisted engineering workflow · colocated infrastructure

- Building a Rust-based vector database and query/index engine using Claude Code, Codex, MCP/OpenRouter, Beads, repo-local instructions, persistent project memory, controlled short-context sessions, and verification loops.
- Use multi-agent workflows for design exploration, implementation planning, red-team review, code review, and documentation.

CREDENTIALS

- US Patent 11,023,942 · secure data cryptography
- Prevailed pro se in domain-name defense; secured Reverse Domain Name Hijacking finding
- Commercial Pilot, Instrument Rated; Flight Instructor · CFI / CFII / MEI
- FAA Inspection Authorization; Airframe & Powerplant Mechanic

EARLIER WORK

Earlier engineering work includes Pala Interactive, GlobalCare Analytics, Palmetto Solar, Trailer Park, Kodak, Warner Bros., Toyota/Lexus, Blizzard Entertainment, and other web, mobile, streaming, gaming, healthcare, fintech, and data systems engagements.

Longer work history, legacy project detail, references, and role-specific technical deep dives available on request.