

# Matt Owen

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## tl;dr:

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AI Hacker and Chaos Engineering Advocate, operating at immense scales with zero downtime. I have worked for 20 years as a Software Engineer and Software Engineering Manager, tackling problems in “Big Data” from the get-go. My teams and I have consistently solved complex problems, owned a ton of infrastructure, and celebrated the delivery of ambitious projects. Whatever my ikigai is, it braids Mathematics and Programming; *I'm loving this AI boom.*

<b>ML + AI</b>	Generative AI, LLMs, RAG, Knowledge Graphs, pgvector, LangGraph, LangSmith, Fine-tuning, LoRA
<b>Engineering + Platform</b>	Terraform, Kubernetes, MLOps, Airflow, Kafka, Celery, AWS, GCP, Go-lang, Python
<b>Achievements</b>	<ul style="list-style-type: none"><li>• <a href="#">Managed Backend and Data Engineering teams</a> solving challenging technical problems</li><li>• <a href="#">Launched innovative, agent-based, llm-powered products</a></li><li>• <a href="#">Architected and deployed massive-scale, real-time data pipelines</a>: 1M+ records/second</li><li>• <a href="#">Maintained infrastructure comprising 1,000+ instances</a></li><li>• <a href="#">Freelanced as a Founding AI Engineer</a>, building ML applications for seed-stage companies</li><li>• <a href="#">Fine-tuned Mixtral and gpt-oss-20b</a> to build red-team models for synthetic data generation</li></ul>

## Work Experience

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### Warmer

#### Founding AI Engineer

November 2024 - Present

Building the future of Financial Advisory. In this role, I launched two AI products from zero to production: a financial advisor assistant and intelligent client-advisor matching system, optimizing Cost-per-Lead.

- Zero-to-One: founded and scaled AI product from zero to first paying customer - [LangGraph](#), [OpenAI](#), [Python](#)
- Built conversational, lead-gen agent, the foundation of the new business model - [LangGraph](#), [LLM](#)
- Achieved ~0% hallucinations through grounding and post-inference validation techniques - [LangGraph](#), [Python](#)
- Built and curated LLM evaluation pipelines, golden datasets, & hallucination scoring - catching 99% of issues - [LangSmith](#)
- Architected multi-agent system managing complete client lifecycle, processing 1000+ meetings per day - [LangGraph](#)
- Introduced experiment-driven development culture with A/B testing and feature flags - [PostHog](#)
- Built sub-12 second transcript analysis pipeline for real-time processing - [Celery](#), [Amazon SQS](#)
- Designed complete agent architecture including RAG, memory, and tool usage systems - [pgvector](#), [RAG](#), [LangGraph](#)
- Implemented hybrid-search RAG system across 1,000,000+ client communications - [GraphRAG/LightRAG](#), [pgvector](#)
- Modified open-source dynamic Knowledge Graph, [LightRAG](#), to support [pgvector/Postgres](#) backend - [pgvector](#), [Python](#)

### Freelance / Stealth Startups

#### AI Engineer, Hacker

September 2023 - November 2024

Freelanced, worked on several projects with early-stage startups, building out AI products.

#### WorkMate Labs: Workmate is your AI teammate

- Designed and built a Digital Assistant, automating task extraction and email drafting - [LLM](#), [Python](#)
- Designed and deployed LLM Prompts for contextual, personal email drafting - [ChatGPT](#), [Gemini](#), [LLM](#)
- Designed and deployed custom evaluation framework for measuring LLM performance - [LangSmith](#), [Python](#)
- Designed retrieval system for context-aware search of similar sent emails - [Retrieval](#), [node.js](#)

#### Stealth Startup: FoodTech, translating conversations into API calls

- Fine-tuned [Dolphin Mixtral](#) to improve conversational style - [Mixtral](#), [HuggingFace](#), [Python](#)
- Designed and built question-answering workflows inspired by Graph-of-thoughts - [OpenAI API](#), [Python](#)
- Designed and built SMS-based chat interface to LLMs - [AWS Bedrock](#), [LangChain](#), [Twilio](#), [Python](#)
- Automated MLOps for LLM-based projects - [finetuning](#), [testing](#), [deployment](#), and [performance evaluation](#)
- Designed and deployed IaC for all services - [Terraform](#)

#### Stealth Startup: Generative AI Customers as a service

- Diagnosed and solved a mission-critical problem for scheduling flow of traffic to clients - [Math!](#)
- Designed and built API to develop, simulate, and actually orchestrate system traffic flows - [Python](#)
- Standardized ML Ops approach for use with [Stable Diffusion](#) and LLMs - [Terraform](#)
- Designed and built tooling to monitor, compare, and research LLM performance - [Python](#), [LLM](#), [LLaMa](#)

## Owl.co

### Software Engineer

January 2023 - September 2023

Returning to the startup world, I designed and built products, catering to the Insurance Industry, with a focus on integrating Machine Learning with Human tasks. Here my focus was on ML products instead of Data scale.

- Led an interdisciplinary team building ML products, automating tasks performed by human investigators: scraping the web, classifying documents, designing ETLs - Clojure, PyTorch, Presto, Spark
- Architected systems to integrate ML inference with human-driven tasks - Clojure, AWS Sagemaker
- Automated hundreds of daily insurance claims investigations with the use of ML, reducing manual investigations by 70%
- Designed and built ETL workflows for analytic databases - Airflow, Spark
- Built dashboards tracking performance of ML models against their human counterparts - Presto, Airflow
- Deployed and maintained infrastructure - AWS CloudFormation, AWS SageMaker
- Mentored mid-level Engineers on Data Engineering

## Oracle Data Cloud, MOAT

### Software Engineering Manager

December 2019 - October 2021

I led a highly technical team to create a vast, event-level data store, used as the source-of-truth for the suite of MOAT products. The real-time system processes 1.2M+ records/second, and requires zero downtime. Consequently, I grew a team with high technical aptitude, and emphasized ownership as a core principle in Software Development.

- Managed and grew team of 7 Data Engineers, ranging from College Recruit to Senior Engineer
- Built multiyear Software Roadmap with Engineering Managers and Product Owners
- Mentored and promoted every Software Engineer on my team
- Collaborated with ML Engineers and Data Scientists to release and update models in production code
- Collaborated with outside Engineering and Data Science stakeholders to design a flexible data pipeline
- Led project to migrate legacy systems from EC2 to Kubernetes (EKS) - Kubernetes
- Migrated legacy core business logic to modern systems - Kafka, Airflow
- Managed a team owning 800+ instances - AWS
- Managed a budget of \$340,000+ per month
- Authored technical proposals for Data Privacy, System Architecture, and Wire Protocols
- Co-wrote and presented software application proposals, detailing and defending technology decisions
- Reviewed and approved technical design proposals and outage postmortems

## Oracle Data Cloud, MOAT

### Tech Lead, Data Engineering

February 2017 - December 2019

I stabilized and scaled a massive computing cluster, halved instance count, and saved over \$2M annually. Comprising a massive 30k codebase, the real-time system contained all business logic to power the MOAT dashboard, and required biweekly deployments. Here, I emphasized stability and correctness, deploying frequent changes across 1,000+ instances.

- Managed weekly software releases for core business logic, contributed to by 4 distinct teams
- Built multiyear roadmap for the data pipeline, and the systems that power it
- Onboarded all new hires to MOAT's data pipeline
- Designed and built stream-processing applications processing 1.2M+ events/second - Go-lang, Python, Kafka
- Designed and built system-wide wire protocol - Protobuf
- Built custom software that reduced instance count by 50%, saving over \$2M dollars - Go-lang
- Built and maintained software end-to-end over 1,000+ AWS instances (c5.xl, r5.xl)
- Designed "cold storage" data schema - Parquet
- Maintained historical databases, importing 800,000,000+ rows per day - Highly modified Postgres
- Acquired by Oracle Data Cloud

## Chartbeat

### Tech Lead, Data Engineering

December 2014 - December 2016

I led an interdisciplinary team as a product-minded Data Engineer, building both the core data pipeline and an initial version of the Chartbeat Historical product. This position introduced me to large-scale distributed systems, leadership, and implementing product-facing changes.

- Led 7-person interdisciplinary Scrum Team
- Designed and built core data pipeline, processing 300,000+ events per second - Kafka and Clojure
- Designed and maintained session-level data warehouse - Amazon Redshift
- Designed and maintained sub-second query databases, importing 1,000,000+ rows per hour - Postgres
- Designed wire protocol - Protobuf
- Built and maintained real-time data-scrubbing libraries - Clojure, Java
- Deployed and configured production machines - Puppet, Fabric