



# RYAN ZERNACH

🏠 AI Infrastructure 🤖 MLOps 💬 LLMOps ⚙️ DevOps ☁️ CloudOps 🏆 NASA Hackathon Finalist (Top 1%)

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## SUMMARY

I'm Ryan, a collaborative team member and leader with 10+ years of engineering experience. I simplify architectures with every change and ship agentic automation workflows using AI, LLMs, ML, GenAI, and audio/video. When building full-stack solutions, I measure uptime, latency, accuracy, \$/task, and \$/quality. I've scaled apps to millions of users and have built durable infrastructure with an emphasis on observability, reusability, reliability, cost-efficiency, speed, and security.

## TECH STACK

- LLM Ops / Semantic Kernel / LangChain / AI SDK
- OpenAPI / Agents / MCP / Voice / AI Evaluations
- Machine Learning Pipelines / Computer Vision
- Python / PyTorch / PySpark / TensorFlow / ETL
- DevOps / Security / Docker / Kubernetes (K8s)
- Databases / SQL / GraphQL / NoSQL / Redis
- CodeGen / Codex / Copilot / Claude / Aider
- Azure / AWS / GCP / CloudOps / CLI / Bash
- WebSockets / Flask / FastAPI / Express / Back-End
- Distributed Queues / RabbitMQ / SQS / Cron Jobs
- Observability Dashboards / Admin Visualizations
- React Native / iOS / Android / Swift / Kotlin / Expo
- TypeScript / React / Redux / Next / Vue / Streamlit
- Apple Pay / Payments / Subscriptions / Checkout
- IMAP / POP / Email Templates / Push Notifications
- SEO / Analytics / Marketing Campaign Automations

## EXPERIENCE

### AI / ML Engineering Consultant • Archlife Industries Software (100% Remote)

2020 – Present

- Automated LLMs to advertise on Reddit by reading posts & commenting on the best ones
- Deployed agentic endpoints for facilitating merchant onboarding & inventory management
- Delivered three chatbots using RAG, tool-calling, voice-powered commands, & interactive maps
- Architected distributed systems with Docker/Kubernetes, DNS, load balancing, & secure orchestration
- Engineered PostgreSQL pipelines and data infrastructure to apply patches and updates without downtime
- Published four social networks & two eCommerce marketplaces that are deployed across iOS/Android/Web
- Engineered observability admin dashboards for marketing insights, analytics, API logs, & database management

### AI Engineer • CellarTracker (100% Remote, Seattle)

2023 - 2025

- Wrote both the front-end & back-end of CellarChat™ LLM chatbot for 1M+ active members
- Architected OpenAPI pipeline, fine-tuning pipeline, LLM evaluations, and observability systems
- Integrated intelligent ML-powered recommendations to personalize new wine discovery at scale
- Helped to boost the new mobile app's ratings to 4.9 average, with 10,000+ verified 5-star ratings
- Embedded Apple Pay code in the React Native mobile app to generate significantly higher revenue
- Implemented barcode scanning, activity feed posts, recommended wines, and advanced image search
- Streamlined the Redux store for fast, efficient, & persistent global state management between sessions
- Rebuilt the React Native app's analytics implementations for tracking critical user interactions & behaviors

### Back-End & React Native Developer • Demosphere (100% Remote, Washington D.C.)

2022 - 2023

- Transitioned entire codebase from Javascript to Typescript for increased long-term maintainability
- Improved computational and network efficiencies by reducing load times and runs to the database
- Evaluated Google Crashlytics to reduce edge case crashes and improve p95 stability & performance
- Iterated on group chat features, push notifications, & native calendar sync to improve user satisfaction

## Back-End & React Native Developer • FinEquities (100% Remote, Miami)

2021 – 2022

- Integrated various APIs, including: bank accounts, stocks, & cryptocurrencies
- Wrote the data visualizations logic for viewing the performance of stocks & crypto
- Built social network features: chat, user profile, posts, likes, emojis, and comments
- Constructed core functionality: copy portfolio, trending investors, & suggested stocks
- Custom-built a companion admin web dashboard to monitor the mobile app's performance

## Web Developer • instaSod.com, CustomizedChristmasLights.com (100% Remote, Atlanta)

2015 – 2019

- Built PHP websites & marketed local online businesses to generate \$500k+ of gross sales in three years
- Planned & founded two local small businesses: landscape design/contracting & professional christmas lighting
- Engineered user experience of uploading videos to website, survey questions, & receiving PDF pricing proposal

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## EDUCATION

### Data Science & Machine Learning (Teaching Assistant)

2020 – 2021

Vanderbilt University, EdX • 100% Remote • Nashville, TN

- Through the act of teaching, I gained exposure to hundreds of machine learning applications
- Taught 900+ college students machine learning, Python, API's, TypeScript, HTML, dashboards, & databases
- Managed a busy schedule of remotely teaching 30+ university students per week for ~60 minutes per lesson

### Data Science & Machine Learning

2019 – 2020

BloomTech (Funded by Y Combinator) • 100% Remote • San Francisco, CA

- Deploying Supervised/Unsupervised Machine Learning Models, Recommendation Engines
- Computer Vision (CV) Models, Audio Processing, Natural-Language Processing (NLP) Pipelines
- Python, SciKit-Learn, PySpark, Data Engineering, PostgreSQL Databases, Back-End API's (Flask / FastAPI)

### Computer Science & Mathematics

2011 – 2012

Georgia Southern University • Statesboro, GA

- Calculus, Statistics, R, Data Structures, Programming Principles, Linear Regression, Visual Basic, C, C++

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## CERTIFICATIONS & AWARDS

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| • <b>2019:</b> Y Combinator Startup School | • <b>2020:</b> Machine Learning Pipelines         |
| • <b>2019:</b> AWS Cloud Practitioner      | • <b>2020:</b> Mosh React Native Academy          |
| • <b>2020:</b> Google Cloud Developer      | • <b>2022:</b> Ethereum Blockchain Developer      |
| • <b>2020:</b> TensorFlow Developer        | • <b>2024:</b> NASA Space Apps Challenge Finalist |

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## PORTFOLIO WEBSITE

