# RYAN ZERNACH — Principal AI/ML Engineer (Full-Stack)

*Ryan@Zernach.com • Archlife LLC • 1099 Consultant • (786) 909-7910 • LinkedIn • Github • 100% Remote*

## HIGHLIGHTS

- Strategic AI/ML engineer focused on AI infrastructure, LLMOps, MLOps, DevOps, & CloudOps (AWS/Azure/GCP)
- Shipped back-end & front-end of CellarChat™ to 1M+ members: fine-tuning, tool-calling, & evaluation pipelines
- Awarded Top 10 of 10,000 Global Projects (Top 1%) with AI Voice Assistant (2024 NASA Space Apps Challenge)
- Boosted mobile app ratings to 4.9★ (10k+ reviews) and lifted recurring revenue by 25%+ with Apple Pay subs
- Deployed agentic RAG chatbots on production workloads, including observability and analytics dashboards
- Built low-latency ML inference services & zero-downtime PostgreSQL migrations across containerized K8s

## TECH STACK

- LLMOps / RAG / MCP / Voice Agents / Evaluations
- GenAI / OpenAPI / LangChain / Semantic Kernel
- Machine Learning Pipelines / Computer Vision
- Python / PyTorch / PySpark / ETL / TensorFlow
- AWS / Azure / GCP / CloudOps / SecurityOps
- DevOps / CI/CD / Docker / Kubernetes (K8s)
- Vector Databases / SQL / GraphQL / NoSQL
- CodeGen / Codex / Copilot / Claude / Aider

- 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
- IMAP / POP / Email Templates / Push Notifications
- SEO / Analytics / Marketing Campaign Automations
- Apple Pay / Subscriptions / Payouts / IAP Webhooks

## 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
- Built end-to-end MLOps pipelines to enable low-latency inference and continuous model updates
- 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 and performance
- Iterated on group chat features, push notifications, and native calendar sync to improve user satisfaction

**Back-End & React Native Developer** · **FinEquities** · *100% Remote, Miami*          *2021 – 2022*
- Securely integrated third-party APIs, including: connecting bank accounts & buying stocks/crypto
- Wrote the data-visualization logic for viewing and comparing stocks/crypto performance over time
- Built social network features, such as chat, user profiles, posts, likes, emojis, and threaded comments
- Constructed core mobile app functionality, including: copy portfolio, trending investors, & suggested stocks
- Custom-built a companion admin web dashboard to monitor mobile app performance & infrastructure health

**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

---

# EDUCATION

**Data Science & Machine Learning**          *2020 – 2021*
*Vanderbilt University • 100% Remote • Nashville, TN*
- As a helpful Teaching Assistant, I gained exposure to hundreds of diverse 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++

---

# CERTIFICATIONS & AWARDS

- **2019**: *Y Combinator Startup School Program*
- **2019**: *AWS Cloud Microservices Practitioner*
- **2020**: *Google Cloud Platform Developer*
- **2020**: *TensorFlow Neural Networks Engineer*

- **2020**: *Machine Learning Pipelines (DataRobot)*
- **2020**: *Mosh React Native Academy*
- **2022**: *Ethereum Blockchain Developer*
- **2024**: *NASA Space Apps Hackathon Finalist*

---

# PORTFOLIO WEBSITE