



Senior Software Engineer with AI and Systems Expertise

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A versatile full-stack software engineer with 15+ years of experience building scalable AI infrastructure, distributed systems, and healthcare platforms. Currently building a greenfield patient communications platform at Freed, selected as the company's top strategic bet. Previously architected a distributed inference framework for 120k models handling 2M daily requests and a layer 1 blockchain at Nesa. Passionate about AI adoption, from engineering culture initiatives to production AI systems.

## Professional Experience

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### Senior Software Engineer

Freed | 2025 - Present

- Founding member of a 4-person team that built a greenfield patient communications platform; selected as the company's top strategic bet and scaled to a larger team.
- Built end-to-end voice and SMS infrastructure including patient identification with dual validation, AI-initiated call transfer, two-way SMS with TCPA-compliant consent, and PHI screening via LLM.
- Shipped BigQuery analytics pipeline as source of truth for pilot metrics, integrating sentiment analysis and call evaluation criteria, and fixing duration reporting accuracy from 0% to 100%.
- Designed care collaboration workflows with PostgreSQL RLS and role-based access, enabling multi-clinician visit collaboration with realtime patient updates.
- Created and shipped '12 Business Days of AI,' a 12-day internal engineering campaign with guest contributors teaching advanced AI patterns, shifting the team from shadow AI usage to documented shared mastery.

TypeScript React Supabase PostgreSQL Twilio ElevenLabs OpenAI Realtime BigQuery tRPC GraphQL GKE Playwright  
GitHub Actions

### Vice President of Engineering

Nesa | 2023 - 2025

- Architected a distributed inference framework for 120,000 models across heterogeneous hardware, handling up to 2M inference requests in a single day.
- Designed and implemented Nesa's layer 1 blockchain, enabling decentralized compute for AI workloads.
- Developed telemetry pipeline using NATS.io and Prometheus to monitor thousands of nodes.
- Led secure containerization for user-submitted models.
- Contributed to equivariant encryption (EE) for end-to-end private AI inference with zero-latency overhead.
- Developed reinforcement learning system for dynamic model assignment.
- Contributed to open-source projects including xFusers and nats.py.

Python CUDA NATS.io Prometheus Docker blockchain distributed systems PyTorch LLMs Hugging Face TypeScript Git  
Linux

# Lead Software Engineer & Director of Design and Development

OpesSky | 2022 - 2023

- Led Unity-based lunar colony simulation game development.
- Designed and implemented 3D environments and shaders.
- Built AI systems for dynamic NPCs with procedural behaviors.
- Directed art team and coordinated UI/UX integration.

Unity C# 3D programming GLSL AI game design JavaScript

# Lead & Senior Frontend Engineer

Vidy | 2019 - 2022

## Lead Frontend Engineer (2020-2022)

- Refactored codebase to Svelte, improving performance for 14M+ monthly users.
- Built components for scalable real-time video and data applications.
- Developed custodial wallet system for user transactions.
- Implemented NLP for ad placement to boost engagement.

## Senior Software Engineer (2019-2020)

- Built scalable APIs and web apps for real-time video.
- Led adoption of modern JS frameworks.
- Engineered fine-grained reactive vanilla JS framework.

JavaScript Svelte TypeScript React HTML CSS NLP

# Founder and Software Engineer

justFielding | 2009 - 2019

- Built and scaled web apps integrating React and Three.js.
- Advocated open-source frameworks to reduce tech debt.
- Managed technical, design, and business operations.

JavaScript React Three.js Node.js C++ Nginx Redis Docker

# Publications.

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## Meta-Learning for Speeding Up Large Model Inference in Decentralized Environments

Y. Du, Z. Wang, A. Farhan, F. Johnston, et al.. COLM 2025. arXiv:2410.21340

## Encrypted Large Model Inference: The Equivariant Encryption Paradigm

J. Buban, H. Zhang, C. Angione, F. Johnston, et al.. arXiv preprint, 2025. arXiv:2502.01013

## Model Agnostic Hybrid Sharding for Heterogeneous Distributed Inference

C. Angione, Y. Zhao, H. Yang, F. Johnston, et al.. MLforSys2024. arXiv:2407.19775

## Towards Secure and Private AI: A Framework for Decentralized Inference

H. Zhang, Y. Zhao, C. Yang, F. Johnston, et al.. NeurIPS 2024 Workshop RBFM. arXiv:2407.19401