

# NICHOLAS B. LUDWIG

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## SUMMARY

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I am a scientist-turned-software engineer. On the technical side, I have architected and written a wide range of software, including two agent frameworks, developer tooling, p2p OSs, and more. On the leadership side, I have managed as many as six engineers; interfaced with other departments and companies; presented and discussed my work in public venues. I am a team player, an empiricist, a fast learner with broad interests, and have been building with and on LLMs daily since June 2023.

## EXPERIENCE

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### Hyperware FKA Kinode FKA Uqbar

February 2022 - Present

*Software Developer to Lead Developer*

- Shipped 10+ full-stack applications on Hyperware, from idea to working prototype in under a week, including two agent frameworks, a real-time multi-user p2p voice app over WebSocket, a trading card game, a file explorer, a hand-written note-taking app, and a kanban-style project manager
- Iterated kibitz, a purely-frontend coding agent, into spider, removing architectural constraints and generalizing; developed “account-free onboarding” pattern from p2p voice app into general framework
- Led and contributed to cross-functional app development: managed engineers extending DM-only p2p chat to CRDT-backed group chats; DAO portal for Hyperware smart contract interactions
- Expanded and maintained developer documentation, iterating with community devs to improve
- Architected and wrote MVP of Wasm VM p2p OS (hyperdrive) adapting bleeding-edge libraries
- Wrote dev tools: go from template to deployment; iterated from community feedback and dogfooding
- Worked with business and legal to design token smart contracts within constraints of Swiss law while also delivering utility to users; oversaw development, including shepherding through audits

### Mod9 Technologies DBA Remeeting

May 2020 - February 2022

*Backend Engineer*

- Owned backend and frontend products; reduced cost of infrastructure by \$1,000/month

### University of Chicago

January 2015 - August 2019

*Graduate Researcher*

- Built Monte Carlo frustrated Ising model simulator in C (6,000 LOC); designed Python/Bash pipeline for running HPC jobs and analyzing results; co-authored four papers including one in *Nature*

## EDUCATION

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### University of Chicago

Ph.D., Physical Chemistry

December 2019

### University of California, Merced

B.S., Chemical Sciences, with honors; Minor in Sociology

May 2014

## SKILLS

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### Languages

TypeScript, Python, Rust, Solidity, Golang, C, Bash

### Technologies

Agent framework CLIs, WebSocket, React, REST, MCP, Wasm, Docker

### Interpersonal

Academic & technical writing, Presentations, Prioritization, Project management