

# 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, 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*

- Architected, built, and prompt engineered spider, an MCP client/server agent framework with tool loops, conversation storage, and reliable orchestration across Hyperware process APIs
- Designed kibitz, a mobile-first coding agent that iteratively writes and tests code using MCP tools
- Developed document-driven AI coding workflow using Claude Code and Codex with custom Telegram integrations for async agent supervision
- Architected and wrote MVP of Wasm virtual machine p2p OS (hyperdrive) inspired by Erlang and Midori, adapting poorly-documented, bleeding-edge libraries for our needs (circa 2023)
- Designed and wrote CLI developer tooling for Hyperware, including templates, building, managing real and “fake” nodes (for development), testing, and deployment capabilities (kit)
- 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
- Expanded and maintained developer documentation, enabling independent developer onboarding

### 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*

- Developed theory, simulator, and data pipelines; 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

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

### Technologies

Agent framework CLIs, React (hooks, zustand), MCP, Tokio, Wasm, Docker

### Interpersonal

Academic & technical writing, Presentations, Prioritization, Project management