

**David Albert**

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Engineer and founder. Deeply technical. Wants [high variance work](#) at the edge of the field. Loves computers.

### How I can help

Solve hard technical problems that are important to your organization. Fine with uncertainty. Will put in the work.

## EXPERIENCE

### Sabbatical – 2023 - 2024

- Programming for fun, 24/7. Primarily on Watt and Chatter (see “Selected Projects”).

### [Recurse Center](#), Co-founder — 2010-2023

- Business: strategy, operations, product, marketing, hiring, legal, facilities, crisis management, etc.
- Dev: primary developer of three web applications totaling ~200,000 lines of code.
- Infra: kept the aforementioned web apps fast, secure, reliable and up to date.
- IT: ran a network supporting up to 100 people. Security, data protection, and system administration.
- Y Combinator S'10.

### [NYC Mesh](#), Volunteer — 2020-2023

- Helped design, build, and maintain network hubs, each providing internet access to hundreds of households.
- Troubleshooting and incident response for a 1,500+ router network running OSPF.

## SELECTED PROJECTS

### [Watt](#), a high performance text editor for macOS ([YouTube playlist](#)) — 2023-2024 — Swift

- Custom copy-on-write BTree-based text storage with  $O(\log n)$  indexing and editing.
- Custom text view using Core Text and Core Animation.

### [Chatter](#), an OSPF implementation (RFC 2328) — 2022-2023 — Go

- [v1](#): Hacky, but implements enough of the Hello protocol and neighbor state machine to exchange LSAs.
- [v2](#): Does less, but a better foundation. Dynamic service management, interface state machine, IOS-style CLI.

### [Thimble](#), a hobby operating system — 2015-2019 — C

- Supports PC (x86-64) and Raspberry Pi 3 (aarch64).
- Preemptive multitasking, protected memory, user-space processes, custom bootloader (PC only).
- Drivers: IDE, AHCI, PCI, VGA (text mode), keyboard, PIC, timers, UART.

### [Proxy](#), a reverse proxy for recurse.com — 2023 — Go, Bash

### [Pager](#), an io.Writer that works like more(1) — 2023 — Go

### [Keybinding Inspector](#), view macOS text system key bindings — 2023 — Swift

### [iso2next](#), a filesystem archaeology project — 2021 — Go

### [miniKanren](#), a logic programming language — 2020 — Swift

## SKILLS

**Programming languages:** Go, C, Swift, Objective-C, Ruby, JavaScript, ClojureScript, and a bit of Rust.

**Domains:** Web, operating systems, concurrency, data structures, text layout, parsers, VMs, computer networks.

**Networking:** IPv4 (ARP, DHCP, ICMP, etc.), IPv6 (ICMPv6/NDP, DHCPv6, etc.), IP routing, OSPF, BGP ([AS14478](#)).

**System administration:** Shell scripting, systemd, iptables, WireGuard, Ansible, AWS, etc.

**General:** Reading large, unfamiliar codebases; understanding complex systems; debugging and root cause analysis.

## EDUCATION

**Columbia University** – New York, NY

*B.S. Computer Engineering, 2005 - 2009*