Andrew D. Gundersen

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Summary

Software engineer with seven years of full-stack and systems work, from C audio drivers and GTK graphics to agent runtimes and production web apps. Spent nearly four years at Accenture shipping enterprise banking software and joining a greenfield AI platform team, owned production codebases and payments systems as a founding engineer at two startups, and built voice and agentic AI products as technical co-founder of Crimata. Takes ownership end to end: designing the system, writing the code, and working through the tradeoffs with designers, leaders, and users.

Experience

Founding Engineer (Contract) Nov 2025 – Jan 2026; Mar – Jun 2026
Ezre & Reliable Residence *New York, NY*

- **AI-Assisted Prototyping:** Built Ezre's end-to-end prototype solo in one week, writing the system and UI design up front so AI coding agents stayed on spec: a two-sided iOS digital-receipts app for blind users that meets WCAG 2.1 AA (Vue 3 + Capacitor, FastAPI/Postgres, live Stripe and Square sandboxes).
- **Payments:** Designed a method to match in-store Square card payments to Stripe-registered users without a shared card token. Worked through patent review with the CEO and 3 attorneys, who confirmed it as patentable.
- **Production Ownership:** First full-time engineer on Reliable Residence's inherited, live Next.js + Firestore codebase. Shipped ∼50 production commits, including Twilio SMS with carrier (A2P 10DLC) compliance, an email migration to Resend (−207 lines), the production Firebase cutover, and Google Analytics instrumentation, favoring small, non-breaking changes to keep the live product stable.
- **System Design:** Re-architected Reliable Residence v2 around Stripe's Accounts V2 API, merging separate tenant and landlord account types into one user + wallet record. This simplified the data model and removed the forced "tenant or landlord" choice at signup.
- **Engineering-Informed Design:** Modeled rental prices as dated "price pins" instead of date ranges, removing database overlap checks and letting one calendar serve both booking and landlord editing. Specced the UI around one reusable "control center" component instead of one-off page controls.
- **Hiring & Mentorship:** Ran Ezre's SWE intern hiring loop end to end with a written rubric (the hire is now a top performer) and onboarded all 4 interns on the team.

Advanced App Engineering Sr. Analyst (Software Engineer) Jun 2021 – Jan 2025
Accenture *New York, NY*

- **Enterprise Delivery:** Wrote data aggregation functions in a Java microservice and built the Angular dashboards that query that data, to deliver a new consumer portal for a global banking client.
- **Frontend Performance:** Refactored 10+ files of the portal's Angular micro-frontend to reduce memory use and simplify maintenance: modular pipelines that update data in place, async/await in place of complex RxJS chains, and stronger unit tests. Led a team retro on the tradeoffs.
- **Greenfield AI Platform:** First engineer from the NYC office to join Asset Engineering, a fast-growing team building an AI data-aggregation platform for executive decision-making (Next.js + React). Proposed a shared UI component library to keep 30+ designers and engineers working from one source of truth.
- **Rapid Prototyping:** Prototyped a schema-driven Angular form wizard for an asset-management checkout in a ∼25-hour sprint, reframing the flow around data entities, not screens; the team adopted its camera component.
- **Technical Leadership:** Pitched two Managing Directors on reusable internal platforms (component libraries, APIs, auth) so client work would compound across engagements, and assembled a 3-person team for the proposal.
- **Teaching & Talks:** Taught a two-week Angular course to ∼12 engineers, weaving in JavaScript fundamentals (event loop, async/await), and gave a 150-person lightning talk on first-principles engineering demoing pico-http, a ∼750-line zero-dependency C HTTP server.

Co-Founder & CEO (Technical) May 2019 – Jun 2021
Crimata *Milwaukee, WI*

- **Agent Runtime:** Built the core of Crimata's voice assistant: a ∼2.8K-line Python agent runtime for multi-step conversations. Each task splits into launch (start a service), fetch (pause for missing info, resuming on the user's reply), and notify (report results), with plugin apps registered via YAML. Predates LLM tool-calling standards.
- **Speech & NLU:** Productionized Crimata's first voice proof of concept as a speech-to-intent pipeline (Google Cloud Speech, Dialogflow, BERT) that understands short replies in context, linking a "yes" back to a question asked several turns earlier.

- **Native Code:** Wrote a 680-line C audio addon for Node.js (wrapping PortAudio) so the windowless desktop app could stream audio without blocking the UI, since browser audio APIs required a window. Forked PortAudio to merge an unmerged branch for headphone hot-swapping.
- **Agentic UI:** Designed and built the Electron + Vue 3 messenger around gestures instead of buttons (hold space to talk, start typing to text), with chat bubbles tagged by the multi-step task they belong to. Kept the Electron security surface to a ∼40-line bridge with channel allowlists.
- **Testing:** Built a no-mocks integration test harness where YAML scenarios seed the database and check real WebSocket responses, verifying multi-user conversations end to end before shipping.
- **Web:** Turned crimata.com into a live in-browser demo of the real desktop app by stubbing that bridge, delivering a first-class website with little extra work.
- **Audio ML:** Trained a 40M-parameter TensorFlow/Keras U-Net for 4× speech audio super-resolution on VCTK, for a conference-call audio hardware concept.

Projects

Personal Server | andrewgundersen.net *Jul 2026 – Present*

- **Infrastructure:** Built a simple working prototype of Crimata Hub for personal use: a self-hosted $5/mo VPS that replaces GitHub, Gmail, and cloud storage with a private git host, mail for 2 domains, a VPN, and an encrypted file share. Hardened with auto-rotating TLS and a two-layer firewall; defined as infrastructure-as-code.

Agent Framework | /git/crimata-agent *Dec 2023 – Jul 2024; Jul 2025*

- **Backend-Driven UI:** Let an AI agent drive a fully fledged UI by binding Vue 3 components directly to live Postgres rows over a WebSocket, so the agent and the user always share one source of truth.
- **Developer Experience:** Made adding an agent tool as easy as writing a tagged Python function: docstring tags mark routes, handlers, and tools, and an AST-based loader registers them at runtime. Pre-MCP (Dec 2023).
- **Networking:** Simplified the server to one Python process on one port, serving HTTP and WebSocket traffic across 3 subdomains through a shared aiohttp handler pipeline.

Crimata Hub | crimata.com/next *Mar 2025 – Jul 2025*

- **Product Strategy:** Designed a self-hosted, agent-driven personal server for mainstream users, motivated by the cost of hosting a separate agent per user in earlier Crimata versions. Presented as an 11-slide hardware and UI mockup; took 6 preorders at $50 each

Skills

Languages: Python, TypeScript/JavaScript, Java, C, SQL
Frameworks: Vue 3, Angular, React, Next.js, FastAPI, aiohttp, Node.js/Express, Electron, Capacitor
AI / ML: Agent runtimes, tool calling, AI-assisted development, TensorFlow/Keras, BERT, Dialogflow
Data & Infrastructure: Postgres, MySQL, Firestore, Linux, WebSockets, TLS, infrastructure-as-code, Google Analytics
Payments & APIs: Stripe (Connect, Accounts V2), Square, Twilio, Resend
Practices: Agile, pair programming, unit and integration testing, accessibility (WCAG 2.1 AA), technical hiring

Education

Xavier University Aug 2015 – May 2019
Bachelor of Science, Engineering Physics *Cincinnati, OH*