https://github.com/killthebuddh4
https://www.linkedin.com/in/achilless
achilles@ktb.pub
858-209-8798

Achilles Schmelzer

I am a full stack software developer with wide-ranging technical experience and strong problem-solving skills. My core competency is web application development with *TypeScript, React (Next.js), Node.js, Postgres, Docker,* and *AWS,* but I pride myself on versatility.

Sabbatical; January 2024 to Present

After a couple of intense years of running a startup, I'm taking a planned sabbatical to be with my growing family. Meanwhile, I've spent my free time developing a number of open source projects, from programming languages to LLM agents to peer-to-peer application servers. You can find a list of my most recent projects on my GitHub (please see the link above).

Technical Founder, Relay; February 2022 to February 2024

Relay was a platform for building, deploying, and supporting small, permissionless, peer-to-peer applications. I led development, design, and testing. Most of my focus was hands-on development but I was also responsible for high-level system design and decision-making. Beyond the purely technical, my role extended to anything tech-adjacent, from project management to developer support to sales. We developed a small constellation of user-facing applications, public libraries, and APIs not only for our own products but also for the XMTP developer ecosystem. Relay folded in January 2024.

- *(TypeScript, Next.js, Elixir)* Developed a Discord-like messenger application using various decentralized protocols and tools

- *(TypeScript, React)* Developed an open-source component library for building XMTP chat applications

- *(TypeScript, React)* Developed an open-source hooks library for building rich applications on top of XMTP and other decentralized protocols

- *(TypeScript)* Developed a type-safe RPC library (very similar to tRPC but using XMTP as the transport layer)

- *(TypeScript, Postgres, OpenAI)* Developed a self-service retrieval augmented generation pipeline and LLM agent for technical project documentation

- *(TypeScript, OpenAI)* Developed a type-safe function-calling LLM agent library for streamlining complex Ethereum transactions (before function calling became a "native" feature of the OpenAI API)

- Led collaboration with a third-party UI/UX design agency

- Led the hiring process for all in-house developers and development contractors

- Designed and implemented a simple-yet-powerful async development workflow for our engineering team

- Collaborated in public and private discussions (both live and async) within the open source XMTP ecosystem.

Full-Stack Developer, Vidaloop; July 2020 to February 2022

I led application development for Vidaloop's election administration and orchestration application. I was primarily an application developer but also worked on high-level system architecture, domain modeling, and cross-team API design. Vidaloop folded in 2023.

- *(TypeScript, React, Node.js)* Developed a React frontend and Node.js API for running elections and synchronizing states between administrators, users, and third-party blockchain node operators

- *(Typescript, React, Hyperledger Sawtooth)* Developed a React frontend for visualizing HyperLedger Sawtooth states

- *(TypeScript, Swift, Kotlin)* Developed a cross-platform election data validation library and toolkit

- Participated in high-level system design meetings with, and collaborated with, domain experts from elections law, certifications, computer security, and cryptography

Lead Developer, Smartmatic; February 2019 to July 2020

I led a small team (3 developers including myself, 1 UI/UX designer, 1 project manager) working on Smartmatic's Los Angeles VSAP contract, a large-scale effort to rebuild and modernize LA County's election infrastructure. We built the project's air-gapped hardware warehousing system for storing, deploying, and maintaining tens of thousands of ballot-marking devices (BMDs, custom tablets).

- *(React, Java, Kafka)* Developed a lightweight Java Spring application for tracking a BMD's state (deployed software, software configuration, hardware configuration, faults, usage metrics, etc) and responding to various diagnostic/control commands

- *(React, Java, MySQL)* Developed a React frontend for visualizing the location and states of tens of thousands of BMDs and for executing remote commands against subsets of those BMDs

- *(Kubernetes, Ansible, Python)* Developed a bespoke toolkit for developing, testing, and deploying software within our heavily constrained development environment (multi-layer auth, air-gapped environments, county-designated certified "deployment" inspectors, etc)

- Collaborated heavily with certification experts, elections experts, and developers throughout a year-long software certification process

Kubernetes Specialist (contractor), Stratus10; February 2019 to February 2020

I led a number of medium-to-small-scale system migrations from "legacy" platforms to Kubernetes on AWS.

- *(Kubernetes, AWS)* Designed, implemented, and deployed application-specific (e.g. for machine-learning pipelines) Kubernetes clusters using Docker and Helm

- Analyzed and reverse-engineered legacy applications to determine build and deployment requirements

- *(Node.js, Mocha)* Collaborated with clients' product stakeholders to develop end-to-end tests for newly-deployed applications

DevOps Engineer, E1C; July 2018 to February 2019

I built and maintained internal tooling, services, and infrastructure used by the organization's application developers. E1C folded in February 2019.

- *(Helm, Kubernetes, Docker)* Developed and maintained a organization-wide config system and build/deploy scripts for Kubernetes-based deployments

- *(Python, Kubernetes)* Developed an election initialization system for deploying new elections into a Kubernetes cluster

- *(GitLab, Docker, Bash)* Developed a git-tag-based, certification-compliant CI/CD workflow for GitLab CI

- *(Node.js)* Developed a TOTP-based multi-factor authentication service

Full-Stack Developer, HundredX; September 2015 to June 2016

I developed a full-stack React + Ruby on Rails customer feedback application. I spent most of my time on our React frontend, but I also worked with the Rails backend and async job system.

Production Coordinator, K-Tube Technologies; June 2012 to June 2015

I developed and maintained operational intelligence systems used by the rest of the organization. I transformed K-Tube's production management system from basic Excel spreadsheets to a semi-automated, semi-optimized system.

Student (B.S. Applied Math), UCLA, incomplete; June 2016 to June 2018

I was a full-time student from 2014 to 2018 but also worked full-time most of the time. I studied applied mathematics generally, and completed all major coursework, but focused specifically on subjects related to computation and language.