

Experience

Freelance Full Stack Developer **High Esoterica** | Honolulu, HI **Mar 2023 - Present**

- In 2023, I spearheaded the development of a SvelteKit based eCommerce application that leveraged TypeScript, Shopify's Storefront API, Svelte's Store, Form Actions, and routing APIs, as well as client-storage APIs, and Contentful, which deployed to Cloudflare pages.
- In 2024, I lowered operating costs by pivoting from Shopify to Etsy, increasing visitor engagement by spearheading the development of a high performance, high-impact, Next.js based PWA that's SEO optimized and content focused. It leverages TypeScript, Contentlayer, mdx-bundler, jstoxml, Serwist, and Next.js' suite of metadata tools and advanced routing APIs. It's deployed via a GitHub Action runner on a serverless architecture on AWS, defined as IaC with SST+Pulumi—a much more cost efficient Next.js hosting strategy (~400% less than Vercel).
- In both I used Tailwind CSS to create a responsive and accessible UI/UX.

Freelance Full Stack Developer **Maitais at Sunset** | Honolulu, HI **Dec 2021 - Present**

- I raised awareness of my client's podcast by developing a GatsbyJS frontend, leveraging Javascript, React, and Tailwind CSS. Pages were generated from GraphQL queries to the user-friendly Strapi CMS backend, hosted on Heroku, with an attached Postgres DB, with assets stored in Google Cloud Buckets.
- I optimized the site for efficient scalability, in using Cloudflare's CDN, to transfer bandwidth at no cost.

Freelance Web Developer **Students Against Sexual Assault** | Santa Barbara, CA **Jul 2017 - Aug 2023**

- I rapidly raised awareness of my client's organization (e.g., +10,000 unique visitors per day at one point), by spearheading the development and maintenance of a high impact, cost-effective, reliable WordPress site. It featured resources for victims of sexual assault, a magazine accessible to authenticated users (via the Auth0 plugin), HTTPS routing, and an engaging layout I designed with the Jupiter theme framework.
- One challenge faced in production was due to underestimating my success in raising awareness for my client, as high user demand slowed the Digital Ocean, LEMP stack, VPS hosting the site to a crawl. However, I was able to rapidly implement a solution using a vertical scaling strategy, and returned the production site back to a performant state.

Research Intern **Mazer Laboratory** | Santa Barbara, CA **Apr 2019 - Feb 2020**

- I helped in saving a project's timeline, as I assisted researchers by leveraging a web scraping algorithm to automate the retrieval of images of *Streptanthus tortuosus* from UC Berkeley's Jepson Herbarium.

Director of Publicity **Associated Students of the University of California, Santa Barbara, Human Rights Board** | Santa Barbara, CA **Jun 2018 - Jun 2020**

- I led a team of 6 individuals that successfully developed and implemented marketing strategies that grew event attendance (+250% from years prior) and awareness of our organization (Instagram followers +500% from years prior). I also shared my expertise by teaching Graphic Design & Advertising courses to team members and mentoring them on industry-standard tools (Adobe Illustrator & Photoshop), designing captivating marketing materials, implementing a new brand identity, and consulting on printing logistics.
- While successful in my position, I learned career defining lessons along the way. Most importantly, effective leadership requires setting clear goals and expectations, and recognizing and utilizing individual strengths is vital in creating a successful, cohesive team.

Web Coordinator **Associated Students of the University of California, Santa Barbara, Human Rights Board** | Santa Barbara, CA **Jun 2017 - Jun 2018**

- I successfully raised awareness of the organization I volunteered with (fundraising increased by +50K USD from the year prior), by spearheading the development of a visually stunning, cost effective,

WordPress site on a LEMP stack configured Digital Ocean VPS running Ubuntu. Which, hosted meeting minutes, and links to forms for individuals and groups to request funding from the Board. I used the Jupiter theme framework to create a high impact, engaging layout. I implemented industry standard privacy and security practices, such as leveraging Certbot to generate SSL certificates to enable HTTPS routing.

Projects

rehype-fn-citation-spacer | npmjs.com/package/rehype-fn-citation-spacer **Jan 2025 - Present**

- I developed (& published to NPM) a open-source rehype plugin to solve a longstanding issue myself and other academic writers have had with how GitHub flavored markdown (GFM) handles serial footnote citations. While this issue is typically solved with CSS or js alone, these solutions don't work in a browser's reader view or a RSS feed reader, hence why I created this plugin.
- Because this plugin is user configurable, I made use of Valibot to validate user configurations, and to provide detailed error messages in case they don't. Zod was the intended schema validation tool, but Valibot was swapped in for its ability to tree shake efficiently in the final bundle. This reduced the distributable bundle size from 124 kB, to 28.5 kB total (a 4.35-fold size reduction)!
- To ensure reliability, I made heavy use of Bun's testing suite (implementation of Jest), to meet my own 90% code coverage requirement. This is validated in a CI (GitHub Actions) environment on every push to the repo, with results uploaded to Codecov. Currently, the extensive tests I wrote for this plugin result in 99% code coverage.
- Finally, using Bun as a bundler, this plugin was compiled from TypeScript to a distributable ES Module. "bun-plugin-dts" was used in this process to bundle Types with this package as well.

Butterfly Signal - Discover Websites on Bsky | github.com/laniakita/butterfly-signal **Dec 2024 - Present**

- I developed an open-source Chromium browser extension (MV3 compliant), that's written in TypeScript, Svelte, and Rust, which leverages Chrome extension APIs, the @atproto/api, Cloudflare's 1.1.1.1 resolver API, Web Assembly, and Tailwind CSS to create a signaling method via the extension's icon and popup, to help users discover and follow websites that have their domain registered on Bluesky (bsky.app) via a TXT record found on such a site's _atproto subdomain.
- So far, this tool has helped me discover/network with far more indie creators on Bsky, than I otherwise would have without it (+5 creators discovered in 20 minutes of PoC testing). My hope is that this extension will contribute to helping small indie creators grow.

Next.js Portfolio/Dev Blog | laniakita.com | github.com/laniakita/website **Feb 2024 - Present**

- I engineered my personal site using a combination of TypeScript (maintainability), Bun (speed), Tailwind CSS (responsive UI/UX), @react-three/a11y (Three.js accessibility), along with Serwist (service worker + PWA) to build a Next.js+React PWA (for SEO+high performance), in a monorepo (Turborepo).
- The latter let's me deploy two separate Next.js frontends, laniakita.com & showcase.laniakita.com, such that the first can keep up with the latest Next.js+React (v15+v19) while the other can stay on the mature Next.js+React (v14+v18) for compatibility with the @react-three suite for my Three.js projects.
- In addition, I use Bun's testing suite to run unit and integration tests in tandem with a GitHub Action runner (on top of using it for it's speedy bundler and file I/O APIs in prebuild scripts) which ultimately deploys the (passing) frontends to a serverless AWS architecture declared as IaC using SST+Pulumi.
- To protect API endpoints, I implemented a memory optimized, Sliding Window Counter rate limiter (similar to the one used by Cloudflare) in the app's Middleware. Such endpoints leverage Next/OG to generate Open Graph/Twitter images on every (valid) route, to create engaging social media posts when a link to the page/post is shared.
- I implemented a custom CMS with TypeScript, Bun, Drizzle ORM, and SQLite/Turso, before switching to Contentlayer for better reliability and easier maintenance. You can read more about this on my blog.

Technologies & Languages

Languages | TypeScript/Javascript, Rust, Python, HTML, CSS, XML, PHP, GLSL, Nix, Lua

Frontend Technologies | Next.js, SvelteKit, React, Svelte, Three.js, React Three Fiber, Threlte, Zustand, Tailwind CSS

Backend Technologies | Node.js, Bun, Drizzle ORM, SQLite, Postgres, JSON, YAML

Cloud & Development tools | AWS, Cloudflare, Vercel, GitHub Actions, SST, Pulumi, Podman/Docker, NixOS, WSL, Distrobox, Webpack, Turbopack, Vite, Turborepo, Git, Jest, Vitest, React Testing Library, Happy DOM

Other | Data Structures & Algorithms, Progressive Web Applications (PWA), Progressive Enhancement, Serverless Computing, Edge Computing, Server-Side Rendering (SSR), Static Site Generation (SSG), Distributed Systems, Responsive Design, Accessibility, Continuous Integration / Continuous Delivery (CI/CD), Infrastructure as Code (IaC), Immutable Operating Systems, Reproducible Environments

Education

BSc Biological Sciences | University of California, Santa Barbara

Sep 2016 - Dec 2020