

Shirley Xu

Product Engineer | React/TypeScript | interfaces that make model decisions legible

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SUMMARY

Product engineer with a design background. I build React/TypeScript interfaces that make complex data and model decisions legible to the people who act on them, and I keep every number traceable to its source. I design and direct the work; AI coding agents (Claude Code, Codex) write much of the code, which I specify, review and test.

EXPERIENCE

Golnvo | Designer & Engineer *healthcare design studio, Arlington, MA*

Sep 2023 – Present

- Primary engineer of goinvo.com: migrated Gatsby to Next.js 16, React 19, TypeScript, Tailwind 4 and Sanity CMS, with 356 permanent redirects for legacy URLs and a structured content model that editors publish from on their own.
- Made impact countable: replaced a blocker-prone analytics tag with a same-origin first-party beacon feeding the CMS, plus server-side GA4 forwarding. One audit counted ~105 first-party exposures against ~5 from the client tag.
- Built CI from scratch: type-check, lint, 2,900+ Vitest tests, build, a Playwright journey and Lighthouse CI on production pages. Caught an A/B rewrite serving *noindex* on the homepage (Lighthouse SEO 66 to 100).
- Designed Marqueta, the studio's LLM assistant in Slack and the CMS, around where the model is not allowed: answers and plan arithmetic come from records and code, and a researched claim counts only if its quote is verbatim in the source.
- Made scheduled automation observable: each run records per-step counts, and a watchdog outside the hosting platform fails runs that never ran, failed, went stale or changed nothing.
- Built internal tools for a small team: persona views in the CMS (coworker, principal), exact-time social publishing with an optimistic lock against double posts, a website-chat to Slack bridge, and a Stripe print shop.
- Earlier: the week-by-week staffing grid for StaffPlan, the studio's capacity-planning product (React, TypeScript, Apollo GraphQL), and an embeddings-based project search for the previous site.

Tomeato Studios | Game Developer & Web Designer *Keene, NH*

Mar 2022 – Sep 2023

- Built a C++/GDExtension entity-component framework for Godot 4 (Phylactory) whose shared contexts keep movement, logistics, energy and rendering systems independently composable; owned features from architecture through profiling.

Dell EMC | Escalation Engineer Intern *Hopkinton, MA*

May – Aug 2019

- Wrote Perl triage tooling that parses storage-array diagnostic output to surface likely failure signals.

SELECTED PROJECTS

Treechi | IDE for systems built as graphs *in development, not released*

- A desktop workbench (C++20, Dear ImGui) that runs, checks and costs graphs of typed components and records who asked for each change, what was measured and what is not claimed: per-node run profiles, gauges on output ports, a draft-to-apply gate for code, MCP for AI agents. I design and direct; AI coding agents write most of the code under test-enforced rules. About 40,000 lines of C++ and 34,000 of tests; v0.1.0, Windows.

Writrospect | AI journaling product *independent build*

- Next.js, TypeScript, Prisma/Postgres, Stripe. Review-gated AI changes (schema-validated, idempotent, expiring) and a synthetic prompt-evaluation harness: deterministic scoring for grounding, privacy and prompt injection, with a cost preflight.

BioData Commons | GWAS summary-statistics API *Golnvo prototype*

- Python/pandas harmonization pipeline (strand and effect flips, genome-build detection, format validation), a FastAPI service and a Python SDK, on demo data.

SKILLS

Frontend: React, TypeScript, Next.js (App Router, Server Components), Tailwind, D3, accessibility (WCAG)

Backend and data: Node, REST, GraphQL (Apollo), Sanity/GROQ, PostgreSQL/Prisma, Python (pandas, FastAPI), Vercel, Stripe

LLM features: Claude API (tool use, web search), MCP, grounding and citation checks, prompt evaluation with cost preflight

Quality: Vitest, Playwright, Lighthouse CI, GitHub Actions, run heartbeats and watchdogs. **Also:** C++20, Rust/WASM, Figma

EDUCATION

Brandeis University | M.S. Bioinformatics, 2023

University of Massachusetts Amherst | B.S. Computer Science, minor in Linguistics, 2020