

Timothy Cheng

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EXPERIENCE

Frontend Software Engineer — Alki

May 2025 – Present

Next.js, React, TypeScript, Tailwind CSS

- Led front-end architecture improvements through state colocation, Context-driven data modeling, and atomic UI primitives, reducing bundle size by 18% and cutting initial load time by 200ms.
- Designed and implemented scalable application architecture using Next.js 14 App Router with hybrid rendering (SSR/SSG/ISR), delivering 8+ dynamic routes and 12+ memoized React components while maintaining 99.9% uptime.
- Built a high-performance media management system handling 88+ optimized images across 8 portfolio projects, enabling progressive loading, virtualized galleries, and intelligent caching to reduce Time to Interactive by 40%.
- Implemented resilient API integrations with Resend and Google Places APIs using retry strategies, input sanitization, and XSS/CSRF protections, achieving 100% form submission reliability in production.
- Drove performance optimization efforts via bundle analysis, code splitting, and tree-shaking, achieving Lighthouse scores of 95+ across all metrics and reducing initial bundle size by 30%.

Full-Stack Software Engineer — Alki

Jan 2023 – Apr 2025

React, TypeScript, Node.js, Express, MongoDB

- Constructed and optimized REST endpoints using Express and Mongoose, improving latency during peak traffic and ensuring consistent frontend data hydration.
- Developed reusable UI primitives and typed service utilities, reducing duplication and accelerating feature delivery across the engineering team.
- Refactored an untyped Express API into a modular MVC architecture with schema validation and unified error handling, reducing duplicated logic by 25%.
- Built shared state modules using React Hooks and Context API, enabling predictable data propagation across 12+ interdependent components.
- Defined typed API boundary contracts using TypeScript and Zod, reducing integration defects and eliminating runtime type mismatches.

Full-Stack Software Engineer — OSLabs

Sept 2024 – Nov 2024

React, TypeScript, Node.js, Prometheus, Kubernetes

- Developed a real-time Kubernetes observability interface integrating Prometheus scrapes, delivering sub-second metric feedback for CPU and memory anomaly detection.
- Optimized polling intervals, batching logic, and typed hydration flows, reducing metric-fetch overhead by 30% while improving UI responsiveness under load.

PROJECTS

Alkira MFA Authentication System

React, TypeScript, Supabase, Tailwind

- Implemented a fully typed authentication flow integrating Supabase Auth with React Router, featuring OTP-based MFA, session persistence, and protected route gating.
- Designed a scalable UI foundation using atomic component primitives, custom validation schemas, and Tailwind tokens to ensure predictable state transitions and extensibility.

TECHNICAL SKILLS

Languages: JavaScript (ES6+), TypeScript, Python, SQL

Frontend: React, Next.js, React Query, Redux, Tailwind CSS, shadcn/ui, Radix UI, RTL, Framer Motion

Backend: Node.js, Express, Supabase, PostgreSQL, MongoDB, Mongoose

Systems / Tooling: Docker, Vercel, Kubernetes, Prometheus, Grafana, Jest, Vite, Webpack, Git

EDUCATION

University of California, Santa Barbara

Bachelor of Arts in Economics