

TO YIN YU

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SUMMARY

Software developer with a B.S. in Computer Science from UMD and hands-on experience building deployed full-stack applications with Python, FastAPI, React, TypeScript, PostgreSQL, Redis, and Docker. Interested in backend, full-stack, and applied AI engineering roles.

TECHNICAL SKILLS

Languages: Python, JavaScript/TypeScript, Java, Swift, C, Rust, OCaml, Ruby, SQL

Web & Backend: React, Next.js, Astro, FastAPI, Tailwind CSS, PostgreSQL, Redis

ML & Data: TensorFlow, Keras, scikit-learn, Pandas, NumPy, matplotlib, seaborn

Tools: Docker, Git, Linux/Unix, Vercel, Netlify, Jupyter

SELECTED PROJECTS

SoloYap — Realtime Voice English Tutor | Next.js, React 19, TypeScript, OpenAI Realtime API, WebRTC, Tailwind CSS, PWA

soloyap.com

- Built a realtime voice English-practice app on OpenAI's Realtime API over WebRTC: learners speak through 13 CEFR-graded scenarios (A2–C1) or a free-chat mode and get instant grammar corrections and better-phrasing suggestions after every turn.
- Shipped as an installable PWA with optional Mandarin/Cantonese hints; cost-protected with per-IP rate limits, session caps, and an email-allowlist flow.

SoloMock — AI Voice Mock Interviewer | Next.js, TypeScript, OpenAI Realtime API, WebRTC, Monaco, Tailwind CSS, Vercel

solomock.com

- Built a realtime voice mock-interview app: the candidate speaks through coding problems while the AI probes complexity, gives Socratic hints, and reads code via debounced Monaco-editor snapshots streamed over a WebRTC data channel (9 languages).
- Authored 15 structured per-problem "interviewer briefs" (solution tree, 4-rung hint ladder, follow-ups, edge cases) driving interviewer behavior via the system prompt; layered cost protection with per-IP rate limits, session caps, and ephemeral keys.

all-in-one-URL — Short URLs, QR Codes & Barcodes | Python, FastAPI, PostgreSQL, Redis, Docker, React, TypeScript, Tailwind CSS

all-in-one-url.vercel.app

- Built a FastAPI backend for short URLs, QR codes, and barcodes with per-resource analytics, Redis-backed caching and counter batching, and tiered SlowAPI rate limiting.
- Implemented JWT auth with bcrypt hashing and per-resource ownership (preserving anonymous resources); containerized with Docker Compose and deployed across Vercel, Render, Neon (Postgres), and Upstash (Redis).

United Front Roofing — Marketing Site & AI Voice Agent | Astro, TypeScript, Tailwind CSS, ElevenLabs, Cal.com API, Netlify

united-front-roofing.netlify.app

- Shipped an Astro + Tailwind marketing site with a rule-based chat assistant, multi-step quote estimator, project gallery, and SEO-optimized routing.
- Integrated an ElevenLabs voice agent with Cal.com API webhooks to answer roofing FAQs, triage emergency requests, and book real inspection appointments end-to-end.

Modern Web Dev Guide — Interactive 2026 Web Dev Course | Docusaurus, TypeScript, React, MDX, Mermaid

tonyx1998.github.io/modern-web-dev-guide

- Built an interactive quiz engine on top of the guide — a ~700-question bank with per-session seeded sampling, mandatory checkpoints, and progressive sidebar locking that gates each chapter behind prereq quiz passes.
- Authored 11 chapters spanning web foundations, project lifecycle, the modern tech stack, AI integration, and career paths; deployed via Docusaurus + MDX + Mermaid on GitHub Pages.

EDUCATION

University of Maryland, College Park — College Park, MD

Bachelor of Science, Computer Science · December 2022

Relevant coursework: Data Structures, Artificial Intelligence, Data Science, Computer Systems, Web Development.