

David Liu

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EDUCATION

University of Western Ontario

London, ON

B.Eng. Software Engineering, Co-op

Sep 2022 – Jun 2026

- **Awards:** ESA International CanSat Competition Semi-Finalist (1st in Canada, Team Canada); 2nd Place (\$5,000), TELUS AI at the Edge of Innovation; Top 5 Finalist, UofT Hacks

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, TypeScript, SQL, HTML/CSS

Frameworks: React, Next.js, Node.js, Express.js, FastAPI, Three.js, React Three Fiber, Tailwind CSS

Infrastructure: PostgreSQL, Supabase, pgvector, Docker, GitHub Actions, GCP Cloud Run, Hetzner, Vercel, Git, Linux

AI/ML: OpenAI API, RAG systems, LangChain, agentic AI pipelines, embedding pipelines

EXPERIENCE

J.D. Power

London, ON

Software Engineering Intern

May 2025 – Present

- Shipped backend and data-pipeline fixes for Stellantis' Build & Price platform, ensuring accurate MY26 Jeep configurations served to millions of end users in production
- Authored internal research report on integrating Git Pilot for automated vulnerability detection across large-scale automotive codebases, presenting findings to engineering leadership

Tethos Association (TSI)

London, ON

Founder & President

May 2024 – Present

- Founded and scaled a federally incorporated nonprofit to 80+ members across 2 chapters (Western, UBC) with 3,000+ community reach, backed by the Morissette Institute of Entrepreneurship
- Shipped TSI's internal platform serving 400+ members with hiring automation, a RAG-based AI assistant, email workflows, and a gamified 3D dashboard
- Consulted and delivered 20+ pro-bono software projects including SettleIn for IRC (mobile app serving refugees), an agentic AI discovery pipeline for World Vision, and an interactive space glove exhibit for London Children's Museum (225,000+ annual visitors)

Modern Engineering

Delta, BC

Software Engineering Intern

May 2024 – Sep 2024

- Developed a full-stack tool management application using React.js, Node.js, Express.js, and PostgreSQL, reducing tool assembly time by 25% across the manufacturing floor
- Automated internal reporting pipeline in Python, cutting report generation time from 2 hours to 5 minutes

PROJECTS

TSI Platform | *Next.js 16, React Three Fiber, FastAPI, Supabase, pgvector, OpenAI, GCP*

2025 – Present

- Solo-built a full-stack platform serving 400+ users with 22 API endpoints: hiring pipeline with auto-scoring and applicant flagging, email automation via Supabase Edge Functions, bounty board, shop with virtual currency, quest/achievement system, leaderboard, and event RSVP
- Engineered a 3D game dashboard in React Three Fiber with FBM noise terrain, 7-phase day/night lighting, 2D sprite characters on 3D billboards, interactive building entry transitions, personality quiz mapped to RPG classes, and a 6-tier rank progression system
- Built a standalone RAG microservice (FastAPI, Docker, Cloud Run) indexing Google Drive + Notion into pgvector (OpenAI text-embedding-3-small, 1536-dim, IVFFlat cosine index), with content-hash delta re-indexing, top-6 similarity search, cited responses, and three LLM query modes
- Architected Supabase SSR auth with PostgreSQL RLS policies and Zod API validation; built CI/CD pipeline with GitHub Actions, Docker, and GHCR for game server deployment to VPS

EXTRACURRICULARS

Tsinghua University, AI Research Assistant | Wav2Lip deepfake research, published study

May 2023 – Aug 2023

Western Founders Network, VP of Education | Ontario's largest hackathon edu event, 100+ attendees

Sep 2023 – Sep 2025

Western Engineering Satellite Team, CDH Team Lead | onboard computer in C, Docker

Sep 2022 – Aug 2023

Ignition Hacks, Judge

Aug 2025

Classical Guitar, National Competitor | performed at Carnegie Hall, 2nd Place NW Guitar Competition

Nov 2014 – Present