

Leo Zhang

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EDUCATION

University of Waterloo

Bachelor of Applied Science – Systems Design Engineering

Waterloo, ON

Sep 2025 – Apr 2030

WORK EXPERIENCE

Incoming Software Developer

The Government of Ontario

Jan 2026 - Apr 2026

Toronto, ON

Software Engineer

Incendium Academy | EdTech Startup

May 2025 – Aug 2025

Toronto, ON

- Designed scalable **Flask services** to handle concurrent traffic, raising system throughput by **30%**
- Built automated **unit, regression, integration tests** validating 5+ features and sustaining **99.8% uptime**
- Diagnosed **API, auth, and SQL** failures in production to cut recurring user-facing issues by **40%**
- Optimized **PostgreSQL** schemas and queries to reduce analytics query latency by **35%** platform-wide
- Shipped features through **CI/CD pipelines**, accelerating release cycles and improving dev velocity by **25%**

PROJECTS AND CONTRIBUTIONS

AI Chatbot | React, TypeScript, Tailwind, FastAPI, Python, LangChain, LangGraph, SSE

[GitHub](#) | [Demo](#)

- Built **LangChain + LangGraph agent** workflow to orchestrate LLM reasoning, generating **10,000+ replies**
- Implemented **FastAPI** backend with **SSE streaming** to cut perceived latency and improve response flow
- Deployed backend on **AWS Lightsail** and tuned routing to reduce request overhead by **35%** across users
- Developed modular **React + TypeScript** UI components with Tailwind to support **1,200+ sessions**

Video Sharing Platform | MongoDB, Express, React, Next.js, AWS S3, Typescript

[GitHub](#) | [Demo](#)

- Built **Node API** for media uploads and integrated React client logic, supporting **100+ videos** reliably
- Implemented **JWT auth** and validation to secure routes, reducing unauthorized access attempts by **40%**
- Optimized **MongoDB** queries and caching to cut request latency by **38%** across active sessions
- Created modular **React** components with dynamic search and rendering to speed up content discovery

Data File & Dataset Merger | Python, Flask, React, PostgreSQL, OpenAI API, Docker

[GitHub](#)

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Audio Visualizer | React, Three.js, Web Audio API, FFT, Tailwind, Vite

[GitHub](#) | [Demo](#)

- Implemented **Web Audio API + FFT** to drive real-time 3D animations synced accurately across all beats
- Built **Three.js** scenes with dynamic meshes and motion curves to produce fluid audio-reactive visuals
- Optimized render loops and geometry updates to reduce frame drops by **35%** during peak frequencies
- Developed **React** UI with Tailwind and custom shaders enabling smooth interactive visual effects

LEADERSHIP & EXTRACURRICULARS

Hack Club Chapter Leader

Sept 2025

- Led weekly coding workshops for **30+ students**, improving web dev proficiency and project completion rates
- Organized and executed **3+ hackathons**, coordinating logistics and mentorship for **100+ participants**
- Built open-source projects using **React, Python, JavaScript** to foster a collaborative coding culture
- Guided members through debugging, Git workflows, and deployment practices to strengthen engineering skills

TECHNICAL SKILLS

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

Frameworks & Libraries: NumPy, Pandas, React, Next.js, Node.js, Express, Flask, FastAPI, Three.js, Tailwind CSS

AI & Systems: LangChain, LangGraph, LLMs, Prompt Engineering, NLP Pipelines, SSE Streaming, Orchestration

Data: PostgreSQL, MongoDB, NoSQL, ETL Pipelines, Data Modeling, Validation, Analytics

DevOps: Docker, GitLab CI/CD, Jenkins, AWS (S3, EC2, Lightsail, CloudFront), Vercel, Agile/Scrum