

Eugene Lee

✉ e33lee@uwaterloo.ca  linkedin.com/in/ygnlee  github.com/yvjnlee

EDUCATION

University of Waterloo

Expected: April 2027

B.A.Sc. in Computer Engineering, Quantum Engineering Specialization

SKILLS

Languages: Python, C, C++, C#, Java, TypeScript, JavaScript, SystemVerilog, Bash, SQL

Libraries & Frameworks: NumPy, Pandas, scikit-learn, React, Node, Express, Nest.js, Redux, .NET

Tools: Git, Linux, Docker, AWS, GCP, Azure, MATLAB, Jupyter Notebook, Anaconda

Relevant Coursework: Data Structures & Algorithms, Linear Algebra, Probability & Statistics, Signals & Systems

EXPERIENCE

Backend Developer Intern

Toronto, ON

University of Toronto

Sept 2024 – Dec 2024

- Optimized API performance by consolidating redundant database queries, cutting **3x** query volume per request
- Implemented role-based access control and network security using OIDC and OAuth 2.0 for **60,000+** users
- Migrated on-premise services to Docker containers on Azure, reducing deployment time by **50%**
- Modernized legacy mainframe code, reducing system maintenance time from **48 hours** to **5 minutes**

Application Developer Intern

Waterloo, ON

University of Waterloo

Jan 2024 – Apr 2024

- Developed course management API using ASP.NET and C#, streamlining data workflows with CRUD operations
- Led module redesign with Figma, reducing feedback cycles from **3 months** to **2 weeks** through stakeholder demos
- Integrated custom APIs for automatic course data population, reducing time to manually input fields by **30%**

Software Engineer Intern

Waterloo, ON

Foqus Technologies

May 2023 – Aug 2023

- Developed backend services using Nest.js, implementing CRUD operations to manage job-related data
- Applied service workers for background synchronization of medical information, reducing page load times by **30%**
- Cached frequently accessed data in local storage, reducing database calls and improving load times by **25%**
- Identified and supplied DICOM medical datasets used to train and fine-tune AI models, supporting the team's quantum-algorithm-driven solutions

Software Engineer Intern

San Francisco, CA

CyberFilm

May 2023 – Aug 2023

- Developed company's flagship storyboard feature serving **1000+** users using React and Redux
- Built factory pattern pipeline to optimize prompts through GPT-4, reducing token length by **40%**
- Integrated DALL-E with dynamic character injection, improving acceptable image rate from **37%** to **83%**
- Implemented contextual prompt optimization, projecting **\$10,000** savings from reduced regenerations at scale

PROJECTS

C# Trading Engine | C#

github.com/yvjnlee/trading-system

- Built an order matching engine with FIFO-based algorithm for market and limit order processing
- Implemented TCP/IP server handling client order submissions, modifications, and cancellations
- Designed an orderbook system with real-time trade matching and custom logging infrastructure

Personal Finance App | TypeScript, Express, Node

github.com/yvjnlee/wrrn

- Built a financial data parser with PDF-parse, implementing column mapping system for flexible data ingestion
- Integrated RSA encryption with crypto library to secure sensitive financial transaction data
- Developed transaction aggregation pipeline for automated spending pattern analysis and budget tracking

LLM FPGA Hardware Accelerator Lab | SystemVerilog, Xilinx Vivado

- Designing MAC units, exp/div operations, and GELU activation functions in SystemVerilog simulation
- Implementing systolic array matrix multiplication and address generators for FPGA deployment
- Optimizing complete LLM acceleration design with iBERT integration and hardware validation