Gordon Lin

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EDUCATION

University of Toronto **September 2021 – April 2025**

Bachelor of Applied Science (BASc) in Computer Engineering + PEY Co-op

- **Currently Enrolled**: Data Structures & Algorithms, Operating Systems, Databases, Software Engineering
- **Completed Courses:** Programming [C, C++], Software Design, Deep Learning [PyTorch], Computer Organization [Verilog, C]

SKILLS

Languages: Java, C, C++, Python, JavaScript, HTML/CSS, SQL (MySQL), SPARQL, Verilog, ARM Assembly

Frameworks/Libraries: React, Express.js, Astro.js, PyTorch, GTK, JavaFX, NumPy, Tailwind

Technical Skills: Data structures, algorithms, programming paradigms (OOP, functional), version control (Git, GitHub/GitLab), full stack web development (frontend, backend, REST APIs, HTTP protocol, DOM), Linux, Unix shell (Bash), computer architecture, software design, Graphical User Interfaces (GUIs), Agile method, unit testing (UnitTest++), software development life cycle

Interests: Hiking, biking, historical fiction, piano, trombone, frisbee

WORK EXPERIENCE

Web Application Engineer Intern | *School of Cities* | Toronto, ON **September 2023 – Present**

- Developed a customizable map visualization tool for city data using **React** and the **Leaflet.js** mapping library.
- Built a plotting tool with the **MUI** and **Recharts** libraries to generate 8+ graph types using city indicator data.
- Designed **SPARQL** queries to retrieve data from remote databases.

Knowledge Graph Engineer Intern | *School of Cities* | Toronto, ON **May 2023 – September 2023**

- Constructed a customizable **React**-based web dashboard to analyze city indicators through 10+ visualization options.
- Developed 7 backend REST APIs using **Express.js** and the HTTP protocol to connect the frontend to **SPARQL** databases.
- Produced comprehensive documentation of backend code and infrastructure to ease future developer understanding.
- Conducted rigorous testing and optimization of codebase, successfully reducing API response times by up to 40%.

EXTRACURRICULAR EXPERIENCE

Drone Software Engineer | *UofT Aerospace Team* | Python | Toronto, ON **September 2022 – April 2023**

- Led a three-member team in developing operating software for a custom drone, resulting in a successful test on a drone prototype.
- Devised a novel flight path optimization algorithm using **Python**, increasing test scores by up to 60%.
- Spearheaded comprehensive testing and debugging during development, rectifying over 20 critical errors.

Web Administrator | *UofT Engineering Society* | HTML, CSS, PHP, JavaScript | Toronto, ON **August 2022 – April 2023**

- Maintained and developed a website used by over 5200 students using **HTML, CSS, PHP,** and **JavaScript.**
- Delivered 10 feature enhancements and resolved more than 30 issues, elevating the website's quality over 9 months.
- Improved navigation by developing a comprehensive **HTML** sitemap.

PROJECTS

Vehicle Detection Model | Python, PyTorch **June 2023 – August 2023**

- Deep-learning model using a modified YOLOv8 architecture to detect vehicles in images, for use in autonomous driving scenarios.
- Extended model to properly detect multiple types of road objects, including vehicle class, pedestrians, and traffic lights.
- Developed a baseline heuristic model in **Python** to compare the main YOLOv8 model against.

GIS City Mapper | C++, GTK **January 2023 – April 2023**

- Comprehensive city-mapper using **C++** and the **OpenStreetMap API,** with all major map features including search and directions.
- Implemented multiple-language support, dark mode, user-defined cities, public transit overlays, and other advanced functionality.
- Improved direction results by developing an enhanced path-search algorithm based on A*, leading to a 50% decrease in load time.
- Parallelized initial data processing using **OpenMP**, leading to a 60% decrease in processing time and 40% decrease in startup time.

Battleship | Java, JavaFX, CSS **April 2021**

- Implementation of the Battleship board game using **Java** and the **JavaFX** user interface library.
- Created a computer opponent with multiple difficulty levels to compete against the player.
- Designed a GUI using **JavaFX** and **CSS** that displays game state and supports loading custom maps, restarting the game, and more.