Joey Yu

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EDUCATION

McGill University   Montreal, QC, Canada
*Bachelor of Arts in **Software Engineering** and **Statistics**.*   *August 2021 – **April 2024***

PROGRAMMING SKILLS

Languages: Python, TypeScript, JavaScript, Golang, Rust, Java, C, C++, OCaml, Bash, Lua.

Technologies: FastAPI, Flask, Celery, RQ, React, Electron, Next,js, SolidJS, NestJS, Passport.js, Jest, Cypress, Tailwind CSS, MUI, Prisma, TypeORM, tRPC, gRPC, GraphQL, WebSocket, Cobra, Sprint Boot, JUnit 5, MongoDB, Redis, etcd, PostgreSQL, MySQL, Docker, Kubernetes, HAProxy, Git, AWS, Firebase, Vercel, Netlify, Linux, Figma.

Interests: Full-stack development, Cloud Computing, Microservices, Distributed Systems, and more!

PROFESSIONAL EXPERIENCE

Flojoy   April 2023 – Present
Software Development Engineer Intern - Full Stack Lead

- Flojoy is an open-source, drop-in replacement for engineering and ETL software such as LabVIEW, Simulink, RapidMiner, and Alteryx. https://github.com/flojoy-io.
- Leading a team of 6 student interns on various projects, working on Flojoy's **Electron** desktop client and **serverless** cloud platform on **AWS Lambda**, reporting directly to the CEO.

Ciena Corporation   May 2022 – April 2023
Software Development Engineer Intern - Cloud Computing

- Designed and implemented a graph algorithm in **Golang** to share resource information between servers in a **distributed system** using **gRPC**, resulted in a significant performance boost compared to before.
- Refactored a TOSCA YAML config parser in **Golang** and shortened the parsing speed by over 400%.
- Implemented a TOSCA YAML converter in **Python**, and integrated it with a **Golang** codebase.
- Introduced **CI** pipeline using **Docker** with **GitLab Runner** to improve the productivity of the team.
- Reworked the **Make** build system to enable incremental update, greatly improved developer experience.
- Designed and implemented a **React** App with a **NestJS** backend to manage firewall configurations.
- Worked in an **Agile** environment, provided weekly updates/demos to all team members.

PROJECTS

K8S on Budget | GitHub   January 2023 – April 2023

- Lead a team of 3 classmates to design and implement a **K8S**-like cloud management system.
- Some key features including a fault-tolerant cloud manager using **etcd**, dynamic scaling based on server resource usage, out-of-the-box load balancing with **HAProxy**, multi-cluster support, an isolated architecture using **Docker** containers, a Web dashboard to monitor all resources in real-time using **WebSocket**, a CLI toolset to issue commands to the cloud manager, and much more!
- Implemented the cloud manager and the cluster server in **Python** with **FastAPI**, the cloud dashboard with **SolidJS** and **Tailwind CSS** for styling, and the CLI toolset in **Golang** using **Cobra**.

EmailGPT | GitHub   March 2023 - April 2023
- A convenient email writing assistant that gives you feedback on your writing and provides suggestions on how to improve it.
- Built with **Next.js** using **OpenAI API** and **tRPC**, styled with **Tailwind CSS**.

Personal Website (itsjoeoui.com) | GitHub, Demo   March 2023 - April 2023
- A personal website to showcase my projects, host my resume, and share my blog posts.
- Built with **Astro** and **Tailwind CSS**, everything is written in **TypeScript**.

Radish Battle Pass | GitHub, DevPost, Demo   February 2023
- Collaborated with hackers in my team and designed a tier-based reward system for Radish (a local food delivery startup) to improve customer engagement as well as user retention.
- Implemented the backend in **NestJS** and the frontend in **React** with **TailwindCSS** for styling.
- **Winner** of the Radish Challenge at McHacks 10 (2nd place)

Roundest Pokemon | GitHub, Demo   Sep 2022 – Oct 2022
- A **Next.js** application that lets users pick the roundest Pokemon between two random Pokemons based on their images, along with a ranking board to show the voting data for all Pokemons.
- Integrated with the PokeAPI and used Next Image for asset caching, providing a faster experience.

Teach a Computer to Do Math | GitHub, Presentation, Demo   Apr 2022 – May 2022
- Trained an LSTM network with **Tensorflow** to do basic arithmetic, such as adding two integers.
- The neural network was able to evaluate the addition expression literally without any text-to-number conversion and provide an answer with decent accuracy for integers below 100,000.

Astro: Star Formation | GitHub, DevPost, Demo   Nov 2021
- Led a team of 3 hackers to build a simulation in **Python** that visualizes the formation of a star from small particles in space using basic physics.
- **Winner** of the Astro Challenge at McGill Physics Hackathon 2021

TreeHugger | GitHub, Article   Mar 2021 – Sep 2021
- Led a team of 3 students to work on a social app prototype that promotes environmental sustainability.
- The mobile client is built with **React Native** with **Expo** using **TypeScript**.
- The server is hosted on **Firebase** with Firebase Auth and its Realtime Database.
- **Winter** of the best project at Dawson College's annual ScienceFest.

Heat Mapping and Dynamic Heat Distribution | GitHub, DevPost   Nov 2020
- Led a team of 3 hackers to build a simulation in **Python** that visualizes the heat transfer process in a 2-dimensional space using heat data collected by an **Arduino** rover we programed.
- **Winner** of the P4labs Heat Rover Challenge at McGill Physics Hackathon 2020.