

Ray Bao, Software Developer

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Employment History

Software Engineer Intern, Microchip Technologies

(Jan 2025 — present)

- Developed a tool using C, python, mako templates, and SWIG to generate device configuration binaries for the **Microchip PIC64-HPSC** (High Performance Spaceflight Computing) MPUs for NASA JPL (Jet Propulsion Laboratory).
- Created and maintained Jenkins Artifacts for the device configurator, distributing to other teams, and coordinating development in an Agile-DevOps environment with JIRA and Bitbucket.
- Developed firmware code and tests verified on custom software and hardware emulation platforms through a Bitbucket/Jenkins pipeline.

Fibre Designer, Glass Consulting Services

(Jan 2023 — Jun 2024)

- Built and deployed a company website with Azure static web applications that is compatible across browser and mobile platforms using HTML, CSS, JS to increase online presence and attract new potential clients.
- Employed Bluebeam Revu to design and issue highly efficient and optimized plans for fibre distribution networks to Bell for construction through a rigorous quality control system.

Future Tech Intern, Nokia

(Jun 2021 — Aug 2021)

- Worked as a PHP developer alongside a network architect to automate testing for proof of concept network topologies on Nokia's **SR Linux Network Operating System**.
- Deployed virtual full and half mesh network topologies hosted on DigitalOcean's cloud infrastructure using IP networks and IP-routing in containerized SR Linux routers using ContainerLab and Docker.
- Integrated ContainerLab with PHP to allow proof of concept network topologies to be more efficiently constructed and deployed from a user-friendly web-app GUI to improve standard rate of deployment by 50%.

Full Stack Web Developer (co-op), Digiterra Interactive

(Jun 2020 — Jul 2020)

- Completed a front-end interface design using HTML, JS, and CSS to improve user experience.
- Worked with an Apache Web Server on a XAMPP stack to integrate a MySQL database along with PHP scripting with calls to the Paypal REST API deliver a functioning subscription service.

Projects

GAIA - McHacks 12 WINNER (Best Use of Generative AI)

(Jan 2025)

- Led development of GAIA, a 100% AI-driven emergent narrative game leveraging OpenAI's api to procedurally generate dynamic storylines and adaptive gameplay.
- Employed DALL-E & Minimax's API to conduct multithreaded AI-video rendering.

Sparky - CodeJam 14 WINNER (Best Use of Hardware)

(Nov 2024)

- Wrote the firmware and software in arduino IDE for a robot productivity companion that tracks your mobile phone usage through Computer Vision with openCV.
- Employed virtualized serial communication and a webcam feed to emulate camera feeds from an arduino ensuring compatibility with future upgrades to the robot's camera module.

WikiChess - HackThe6ix WINNER (Best Game Hack)

(Aug 2024)

- Led the development of WikiChess!, a web-based game (inspired by Wikiracer) utilizing HTML, CSS, JavaScript on a Flask framework that utilizes python's BeautifulSoup4 library to web scrape data and spaCy to conduct Natural Language Processing (NLP) and linguistic semantic comparison

Education

Sep 2022 — Present

B.Sc. Computer Science - AI, McGill University Minor in Economics

Montreal, Quebec

Relevant Courses: Data Structures and Algorithms, Software Design, Computer Architecture

Sep 2018 — May 2022

International Baccalaureate Diploma, Colonel By

Ottawa, Ontario

Technical Skills

- Languages:** Python, Java, JavaScript, PHP, HTML, CSS, SQL, C, Ruby
- Frameworks and Libraries:** Flask, React, Node.js, Vue.js, BeautifulSoup4, spaCy, scikit-learn, pandas, numpy, mako, swig
- Tools and Technologies:** Linux, Docker, ContainerLab, Git, XAMPP, Apache, MySQL, DigitalOcean, Responsive Design, Cross-browser Compatibility, Agile development, CI/CD pipelines