

# Ray Bao, Software Developer

Montreal, Quebec | ray6bao@gmail.com | 613-298-7995 | devray.ca | linkedin.com/in/ray-bao-061728216/ |  
github.com/ray-bao-mcgill | Trilingual: English, French, Mandarin

## Employment History

- Software Developer, Ploomba** (Jul 2024 — Present)
- Contributed to development of an **AI-powered agricultural platform** supporting farmers through intelligent insights and robotic automation.
  - Designed and implemented robust **logging and data management systems** interacting with over **10,000 database entries**, enabling efficient monitoring, debugging, and system scalability.
  - Utilized **Node.js**, **Mantine**, and **Yarn** to build and maintain application components emphasizing performance.
- Software Engineer Intern, Microchip Technologies** (Jan 2025 — May 2025)
- 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.
- 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>B.Sc. Computer Science - AI, McGill University</b> <b>Minor in Economics</b> Relevant Courses: Data Structures and Algorithms, Software Design, Computer Architecture	Montreal, Quebec
Sep 2018 — May 2022	<b>International Baccalaureate Diploma, Colonel By</b>	Ottawa, Ontario

## Technical Skills

- Languages:** Python, Java, JavaScript, PHP, HTML, CSS, SQL, C, Ruby, TypeScript, Golang
- 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, Atlassian, Responsive Design, Cross-browser Compatibility, Agile development, CI/CD pipelines, Version Control