

# Anray Liu

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## Experience

### Co-op Cloud Engineer *Statistics Canada*

May 2025 – Present

- Designed and developed an open-source **Kubernetes microservice** using **Go** to detect and delete unused storage resources in real-time, **reducing cloud expenses by \$20,000**.
- Developed and debugged **CI/CD pipelines** with **GitHub Actions** to automate tests, security scans, builds, and pushes to Azure Container Registry and Docker Hub, increasing team productivity by 25%.
- Delivered applications to **Azure Kubernetes Service** with YAML manifests and **Docker images** while managing production with **ArgoCD**.
- Ensured high communication and efficiency standards with **agile development** by actively contributing to stand-ups, sprints, and epics.

### Mathematics Research Intern *University of Ottawa*

May 2024 – Aug 2024

- Researched visualization methods for optimal transport theory (most efficient way to move one mass distribution to another) with a mathematics professor and a team of 15+ researchers.
- Created a customized simulation and visualization library using **Python**, NumPy, and **Java**, enabling research team to present their findings in an efficient manner and **reducing preparation time by 90%**.

## Projects

### Pyvidplayer2 API

July 2023 - Present

- Cross-platform, open-source **Python** library for video processing and playback, with **38,000+ downloads** and 2+ years of active maintenance.
- Leveraged **Git** and **GitHub** extensively to collaborate with **open-source developers**, resulting in 27 version updates and automatic PyPI deployment pipelines.
- Implemented **96% test coverage** and maintained **detailed documentation** to ensure library quality.

### Personal Development Lab

April 2025 - August 2025

- Created a home server from scratch by assembling hardware, configuring **networking** rules and VPNs, and using **virtual machines** and **Docker** containers to host data and development services.
- Deployed a network-attached-storage system and **Jenkins** CI/CD to automate data processing and **increase personal development productivity by 30%**.
- Utilized ZFS and software RAID to achieve data redundancy and increase server **uptime to 96%**.

### Personal Portfolio

July 2025 - Present

- Developed a JetBrains-inspired, high-performance personal portfolio using **C++**, **WebAssembly**, **HTML/CSS**, and **JavaScript** to share projects and work experiences.
- Hosted with Vercel and Cloudflare, accessible via <https://www.anrayliu.ca>.

## Skills and Certifications

- Python, Go, C++, Java, JavaScript, Kubernetes, Docker, Azure, Linux, ArgoCD, Git, GitHub/GitLab, HTML/CSS, Bash, WebAssembly, Jenkins, GitHub Actions, Jira
- Canadian Computing Contest Certificate of Distinction, Senior Level, awarded in 2023 for placing top 25%

## Education

University of Ottawa, Honours Bachelor's in Computer Science with Co-op

Fall 2023 – Winter 2027

- GPA: 3.9/4.0
- Relevant courses: Data Structures and Algorithms I, Computer Architecture I, Databases I