Anray Liu

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Profile

Student DevOps engineer with real industry experience and a passion for learning new technologies. Strong collaborative skills with emphasis on clear communication and use of best practices. Highly adaptable and can fit into new teams quickly.

Experience

Co-op Cloud Engineer May 2025 – August 2025
Statistics Canada

- Designed and developed an open-source **Kubernetes microservice** using **Go** for real-time idle storage detection and deletion, **reducing cloud expenses by $20,000**.
- Implemented 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 **Docker** images and **ArgoCD**, enabling zero-downtime deployment and best practices with **RBAC** policies and rollback strategies.
- Ensured high communication and efficiency standards with **agile development** by actively contributing presentations to sprint stand-ups and documenting work with **Jira** and **GitLab**.

Mathematics Research Intern May 2024 – August 2024
University of Ottawa

- Researched and developed visualization methods for optimal transport theory (most efficient way to move one mass distribution to another) as sole undergraduate student with professor and team of 15+ researchers.
- Created a customized simulation and visualization library using **Python**, NumPy, and Matplotlib, enabling research team to present findings using an automated method, **reducing preparation time by 90%**.

Projects

Pyvidplayer2 API July 2023 - Present

- Pioneered an open-source, cross-platform **Python** library for video processing and playback with **39,000+ downloads**, 60+ stars, and 2+ years of active maintenance.
- Leveraged **Git** and **GitHub** extensively to collaborate with **open-source developers**, resulting in 27 version updates, automatic PyPI deployment pipelines, industry conventions, and specialized hardware acceleration with NVIDIA **CUDA**.
- Implemented **96% test coverage** with unit/integration tests to ensure software reliability.

Bare-metal Server Management April 2025 - August 2025

- Provisioned personal infrastructure by assembling a bare-metal server from scratch, configuring **Proxmox VE** hypervisor, and using **virtual machines**, Docker and LXC **containers** to self-host 10+ DevOps tools and services.
- Utilized networking concepts **TCP/IP/NAT/DHCP/DNS** when deploying a network-attached-storage system and **Jenkins** CI/CD to automate data processing for other projects, **increasing personal development productivity by 30%**.
- Configured clustering and **high availability** to increase **server uptime to 96%** while leveraging ZFS and software RAID to achieve data redundancy in individual nodes.

Personal Portfolio May 2025 - August 2025

- Developed a JetBrains-inspired, high-performance personal portfolio website using **C++**, **WebAssembly**, **JavaScript**, and HTML/CSS to showcase projects and work experiences (*https://anrayliu.ca*).
- Leveraged **Flask** backend to serve dynamic templates over secure protocols **HTTPS/TLS/SSL**, **Nginx** reverse proxy to serve static content, **Docker Compose** for portable deployments, and Cloudflare DNS for custom domain.

Skills and Certifications

- **Technologies:** Python, Go, Groovy, Kubernetes, Helm, Docker, Azure, AWS, Linux, ArgoCD, GitHub Actions, Jenkins
- Canadian Computing Contest Certificate of Distinction, Senior Level, awarded in 2023 for placing top 25%

Education

University of Ottawa, Honours B.Sc. in Computer Science (Co-op) Fall 2023 – Winter 2028

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