Anray Liu

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Profile

Student cloud engineer with real industry experience and a passion for learning new technologies. Proficient in cloud platforms, DevOps practices, and microservice development. Strong collaborative skills with emphasis on best practices and clear communication. Highly adaptable and can fit into new teams quickly. **Seeking 4-month co-op internship for Fall 2026**.

Experience

Cloud Engineer Intern   May 2025 – Present
Statistics Canada   *Ottawa, ON*

- Architected 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 (ACR), increasing team productivity by 25%.
- Deployed containerized applications on Azure Kubernetes Service (AKS) using Docker and Argo CD while enabling zero-downtime deployments, RBAC policies, and rollback strategies.
- Ensured high communication standards in an agile environment by contributing presentations during sprint stand-ups and documenting work on Jira and GitLab.

Projects

Pyvidplayer2 API   July 2023 – Present

- Pioneered an open-source Python library for video processing and playback with 40,000+ downloads, 60+ stars, and 2+ years of active maintenance.
- Leveraged Git and GitHub extensively to collaborate with open-source developers, resulting in 28 version updates, support for all major operating systems, and adherence to industry conventions.
- Achieved 96% unit test coverage to ensure software reliability.
- Developed an automatic PyPI deployment pipeline using GitHub Actions, completely replacing the previously manual process, while enhancing security with environment secrets.

Bare-metal Server   Apr 2025 – Present

- 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.
- Used TCP/IP networking concepts when deploying a Network Attached Storage system and Jenkins CI/CD, enabling mass data processing for Pyvidplayer2 and other projects.
- Enabled high-availability clustering while leveraging ZFS and RAID for data redundancy, resulting in 97% server uptime.
- Automated server configuration with Ansible and container templates, accelerating setup time by 80%.

TestMyCS Website   May 2025 – Oct 2025

- Developed and deployed a full-stack web application with a Flask, PostgreSQL, and NGINX backend to test users on a variety of Computer Science topics (*https://testmycs.com*).
- Automatically provisioned and configured Azure Virtual Machines using Terraform and Ansible, applying infrastructure-as-code (IaC) principles for reproducible and scalable deployments.
- Built a CI/CD pipeline that builds new images, pushes to Docker Hub, restarts the server, and performs health checks, enabling code changes to go live in under 2 minutes with no manual intervention.
- Containerized application and all dependencies using Docker Compose for one-line deployments.

Skills and Certifications

- **Skills:** Python, Go, Bash, Kubernetes, Docker, Azure, Linux, Argo CD, Jenkins, GitHub Actions, Terraform, Ansible
- 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   Fall 2023 – Winter 2028

- 3.9/4.0 GPA