David Liao
Cloud Infrastructure + Development

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github.com/liaocanada

Education
Carleton University
Bachelor of Computer Science
Computer and Internet Security
Sept 2018 to **Apr 2023**
GPA: 11.9/12.0 (3.9)

Certifications
- **AWS Solutions Architect - Associate** (2020)
- **AWS Cloud Practitioner** (2019)
- Oracle **Java** SE 8 Professional (2019)

Skills
Infrastructure
- **Amazon Web Services**
- Docker/Kubernetes
- Terraform
- Linux

Programming Languages
- **Java 8**
- JavaScript/TypeScript
- Python

Web Development
- **React**
- Node.js
- Spring

Involvement
Community
- AWS Educate Student Ambassador
- Peer Mentor @ Science Student Success Center
- Challenge Organizer @ IEEE Ottawa Robotics Competition
- VP Communications @ Carleton CyberSec Club
- Teaching Assistant

Professional Development
- AWS Public Sector Summit
- cuHacking Hackathon
- BSides CTF, MetaCTF, JustCTF

Work Experience

BlackBerry　　　　　　　　　　　　Sept 2021 to Dec 2021
Systems Developer Intern
- Streamed millions of malicious URLs into a **Redis cache** for **fast lookup**
- **Reduced the required RAM** of a Cron Job from **2GB to 1GB** using streams and enum references to prevent future out-of-memory interruptions
- Set up a Linux Docker container to **forward network traffic** received from a Wireguard VPN interface into a private network **through a NAT router**

Environment: Node.js, Python, Bash, Kubernetes, Helm, Redis, Apache Kafka, AWS MSK, ElasticCache, SSM, Mozilla Sops, Wireguard VPN

Qlik　　　　　　　　　　　　　　　May 2021 to Aug 2021
Backend Developer Intern
- **Removed 10-15 seconds** from user wait times, using Kubernetes custom resources and controllers to **anticipate future load** during pod scaling
- Drove the **deployment of a new Go microservice** into staging and production by defining SLOs, creating indicator metrics, and configuring network policies, resource limits, and service-level settings

Environment: Go, Kubernetes, Helm, Docker, MongoDB, Argo CD, Grafana, Prometheus, Jaegar, ELK, CircleCI, Gomplate, Bash, Nginx, WebSocket

Coveo　　　　　　　　　　　　　　Sept 2020 to Dec 2020
Cloud Infrastructure Intern
- Managed **AWS infrastructure as code** using **Terraform** to consistently support **5** microservices across multiple environments
- Transitioned an **auto-scaling ECS cluster** from on-demand instance types to a **spot fleet** of mixed instance types, saving over **20%** in operating costs while maintaining the original processing power
- Configured **golden AMIs** for Windows Server **2016** using **Packer** and **PowerShell scripts,** which were used to launch new instances

Environment: Java, Terraform, PowerShell, AWS EC2, ECS, Lambda, API Gateway, RDS, CloudWatch, Docker, HashiCorp Packer, Ansible, Jenkins

NewPush　　　　　　　　　　　　June 2019 to Dec 2019
Developer Intern
- Transformed security data and served it to clients through **12 web APIs**
- Reduced HTTP request times by 90% by **caching commonly read data**

Environment: TypeScript, Node.js, Nest.js, Swagger, Angular, Jest, Jenkins

New Portal Corp　　　　　　　　　Feb 2018 to May 2018
Software Developer Co-op
- Developed an **employee management app** used for HR, and deployed it onto an Ubuntu Linux VM instance on Google Cloud

Environment: Java, Spring MVC, Hibernate, MySQL, Google Cloud, Tomcat

Projects　　　　　　　　　　　　(More on davidliao.ca)

Online E-Commerce Bookstore　　　　　　　　　🔗
Developer + Architect Lead (Team of 2)

An imitation **e-commerce bookstore** featuring shopping carts, account creation, order history, inventory tracking, and sales insights. Hosted using a **static frontend, Lambda functions backend,** and **serverless database layer**.

Environment: JavaScript, React, React-Router, Redux, Next.js, AWS Cognito, API Gateway, Lambda, Aurora Serverless, S3, CloudFront, Route 53, SSM