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DevOps & Cloud Highlights

- **IaC & Pipelines:** Terraform modules plus self-hosted GitLab→Jenkins CI for repeatable build→test→deploy across AWS.
- **Containerisation:** Dockerised multi-service stacks; private Harbor registry for image promotion across stages.
- Analysed edge→cloud TCP flows with **Wireshark** and **iperf3**, guiding socket-buffer tuning for latency studies.
- Generated synthetic database traffic with **iperf3** to stress-test cloud-datacentre paths and tune socket buffers for latency.

Relevant Work Experience

Software Engineer - Machine Learning **Jan 2024 – Dec 2024**
University of Guelph *Guelph, Ontario*

- Drove a **30× bandwidth reduction** and **29% latency cut** by integrating Swin-Transformer semantic compression into an edge-cloud pipeline, while keeping image fidelity ≥88%
- Authored an **adaptive network-aware module** that tunes compression in real time, ensuring lowest-possible latency under fluctuating link conditions
- Quantised the PyTorch model to ONNX and **deployed on Xilinx Kria SoCs with Vitis AI**, achieving DPU inference ∼3× faster than CPU baseline
- Containerised encoder, decoder, and a 10 GbE core-network simulator (TCP/IP); profiled round-trip times with iperf3 to verify 29% latency optimizations

Software Developer **Oct 2022 – Oct 2023**
University of Guelph - Robotics Institute *Guelph, Ontario*

- Packaged the complete ROS2, Node.js, and Vue stack into versioned **Docker images** for clean reproducibility across development and test rigs
- Provisioned AWS EC2 and S3 resources with **Terraform**; configured a self-hosted GitLab and **Jenkins pipeline** to build, test, and deploy the full-stack application with zero-downtime rollouts
- Implemented **Let's Encrypt auto-renewal** and Nginx reverse-proxy routing, adding HTTPS and CORS hardening without manual intervention
- Delivered a wheelchair-friendly smart-door system integrating ESP32, PIR sensors, and React Native control; field-tested reliability at 95 % success over 3 months

Information Technology Analyst **Jul 2020 – Dec 2020**
Kitchener Downtown Community Health Center - SRHC *Kitchener, Ontario*

- Designed a Samba-based file-share to replace e-mail transfers, boosting staff file-access speed by ∼40%
- Configured and maintained **FortiGate firewall + VPN** for 60 remote users; drafted monitoring proof-of-concept in Prometheus before hand-off
- Optimized the 3CX PBX workflow, cutting patient on-hold times by 30 %
- Led a hardware refresh (switches, servers, workstations) that met security targets while saving 45 % against budget

Skills

Languages: C/C++, Python, Rust, Java, SQL, Bash, JavaScript, HTML, CSS, CMake
Frameworks: PyTorch, TensorFlow, Node.js, React, Express.js, ROS
Cloud and DevOps: AWS, Azure, Docker, Kubernetes, Terraform, Jenkins, PostgreSQL, MongoDB, SQLite
Tools and Protocols: Git, GitHub, Postman, Flask, Swagger, Jira, HTTP, TCP/IP, UDP, MQTT, iperf3

Projects

Full-stack application Built and Dockerized a full-stack portfolio using React and Java (microservices architecture), hosting it on a home server via a Jenkins CI/CD pipeline and Minio S3 bucket

DevOps Homelab Setup dockerized applications, virtual machines, and Kubernetes clusters sing Terraform scripts. Managed personal Jenkins CI/CD pipelines, and implemented Ceph for distributed storage

Education

University of Guelph | ***MASc. - Computer Engineering***
University of Guelph | ***B.Comp. - Computer Science***
University of Guelph | ***B.Eng. - Computer Engineering***