GURJASHAN SINGH

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EDUCATION

University of Toronto – Computer Engineering – PEY (Graduating May, 2026) **Toronto, ON**
Bachelor of Applied Sciences Class of 2025

- **Currently pursuing minors in business and artificial intelligence**
- **Relevant Coursework:** Data Structures and Algorithms, Object Oriented Programming, Software Communication, Applied Deep Learning, Robot Modeling and Control, Machine Learning, Operating Systems, Embedded Systems, Digital Systems

TECHNICAL SKILLS

DevOps & MLOps	Kubernetes (K3s), Docker, Terraform, Ansible, Argo CD, Jenkins, Kafka, GitOps.
Cloud & Data	EWS (AWS-equivalent), MongoDB, MySQL, Prometheus, Grafana, TSDB, NGINX.
AI & Machine Learning	TensorFlow (Q-learning), PyTorch (cGAN/U-Net), LSTM, Scikit-learn, CUDA.
Languages	Python, C++, Golang, JavaScript/TypeScript, C, Perl, ARM Assembly, Verilog.
Frameworks & Tools	React.js, Next.js, Node.js, Flask, Zod, Marshmallow, Git, Linux.
Concepts	RESTful APIs, CI/CD Pipelines, Infrastructure as Code (IaC), Microservices, SDLC.

EXPERIENCE

Cloud RAN Feature Verification Intern **Ottawa, Canada (Remote, Part time)** *Ericsson*
August 2025 – Present

- **Driving productization of TCDB (Test Channel Database)**, transitioning the resource scheduler from a PoC to a funded, product-grade platform.
- **Developed an AI scheduling engine** using **Q-learning (TensorFlow)** to optimize resource makespan and cost, implementing **TypeScript + Zod** and **Marshmallow** for robust schema validation.
- **Architected the deployment of the Performance Metrics Analyzer (PMA)**, provisioning internal servers (EWS) with **NGINX**, **SSL**, and **Jenkins CI/CD** to migrate the tool from local-host to enterprise production.
- **Automated infrastructure maintenance** via **Bash scripts**, streamlining the developer experience and ensuring high availability and deployment stability for all managed tools.

Cloud RAN Integration Co-op **Ottawa, Canada**
Ericsson May 2024 – August 2025

- **Accelerated CI/CD efficiency** by introducing **Vite** and purging legacy dependencies, reducing production build times from 10 to 3 minutes.
- **Scaled the TCDB platform** (MongoDB + Flask + React) from 200 to 800 users while managing **Dockerized builds**, **NGINX** configurations, and **SSL certificates** for staging and production.
- **Automated JSON-driven configurations**, reducing frontend codebase by 62% (8,000 to 3,000 LOC) and streamlining the integration of third-party components with a **Perl** backend.
- **Facilitated virtual DU test monitoring** using **Kubernetes CLI**, **Moshell**, and **JCAT logs**, while automating complex network data retrieval processes.

Web Developer **Delhi, India (Remote)**
KrayaDotShop Pvt. Ltd. May 2023 – August 2023

- Created and deployed a responsive landing page website with **HTML, CSS, and JavaScript**, that generated **over 12,000 clicks** demonstrating successful user engagement.

PROJECTS

Kernel-level AI Malware Detection Pipeline Code Link

- **Built a Terraform/Ansible MLOps pipeline** to provision isolated VMs and deploy **eBPF tracers** for system call monitoring.
- **Streamed real-time data via Kafka to a TSDB**, training an **LSTM network** for behavioral threat detection.
- **Implemented Observability** with **Prometheus/Grafana** to monitor container resource throttling.

Home DevLab & Secure Networking Code Link

- **Orchestrated K3s via Argo CD (GitOps)** to automate the deployment of AI-driven malware detection agents.
- **Provisioned a VLAN Lab** using a **Raspberry Pi** and **TP-Link** hardware to replicate enterprise network isolation.
- **Engineered secure remote access** via **Tailscale** for encrypted team collaboration. **Authored Ansible roles** for reproducible setup of the hardware stack and local development environment.

Google Maps Clone GIS

- Built a mapping tool with **OpenStreetMap API**, **GTK UI**, and **multi-threaded Dijkstra/A*** pathfinding, achieving **22% faster queries** and **12 times TSP runtime reduction**.

Colorization of Grayscale Images with Deep Learning Demo Link Code Link

- Trained a U-Net cGAN in PyTorch using ResNet-34 encoder and CUDA, producing high-quality colorized images from the 25 k-image Kaggle dataset.

Other Projects: "N.E.O." GPT-powered voice assistant · Portfolio Website · 2D Game Clone (DE1-SoC) · Movie Ticket Booking System