Liam Tanner

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Technical Skills

Programming Languages: Python, C++, C, JavaScript, Linux Bash
Robotics: ROS 2, Linux Application Development, Sensor Integration, Motion Control, State Estimation
Cloud, Databases & Infrastructure: PostgreSQL, Docker, Git, Relational Databases, CI/CD, Automated Testing
Architecture & Performance: Object-Oriented Design, Distributed Systems, CUDA, Hardware Optimization
AI Engineering & Optimization: PyTorch, Convolutional Neural Networks, LLM Orchestration, Mathematical Optimization

Education

University of Victoria Victoria, BC
Bachelor of Software Engineering *Sept. 2021 – Aug 2026 (expected)*

- 4.00/4.00 GPA – 93% Average (2025/2026 Session)
- Relevant Coursework: Operating Systems, Databases, Communication Networks, Optimization for Machine Learning

Experience

Software Engineer Jan 2025 – Present
AUVIC - Autonomous Underwater Vehicles Club *Victoria, BC*

- Engineered a ROS 2 dynamic configuration pipeline to extract PID values and Kalman filter matrices from YAML files, eliminating C++ recompilation downtime and enabling real-time parameter tuning during pool testing.
- Represented the University of Victoria at RoboSub 2026 in Irvine, California, resolving critical thruster saturation limits in the C++ control loop and engineering a state machine for autonomous navigation, advancing the team to the semi-finals of an international engineering competition.

Software Developer June – Dec 2025
Natural Resources Canada *Victoria, BC*

- Collaborated in an Agile Scrum environment to design and implement a scalable ETL/ELT pipeline, processing massive PostgreSQL datasets and reducing execution times from hours to seconds.
- Engineered an encrypted database release-versioning system using SQL to securely track metadata, ensuring full-lifecycle accountability and seamless feature rollouts across 2-week development sprints.
- Automated local setup and deployment processes by rebuilding a legacy frontend infrastructure from scratch using clean JavaScript and writing custom Bash scripts on Linux, cutting onboarding friction for engineering teams.

Research Assistant - Induced Seismicity Project Sept 2023 – April 2024
Natural Resources Canada *Sidney, BC*

- Engineered 3 increasingly complex CO_2 injection simulations using Python meshes and the OpenGeoSys finite element solver, becoming the first NRCan employee to successfully productionize this modeling workflow.
- Advanced the project to a real-world case study by building a 3-layer finite element simulation of the SECURE INGA wastewater disposal well, utilizing precise depth profiles and material properties.

Projects

AI Incident Orchestrator | *Python, PostgreSQL, Groq API, Llama, CI/CD* May 2026 – Present

- Engineered a production-ready AI orchestration pipeline leveraging LLMs and RAG context to automate system incident triage in a distributed environment.
- Contributed within a 17-member team utilizing automated test harnesses and GitHub Actions CI/CD pipelines to validate system resilience and operational quality.

Convolutional Engine | *CUDA, C++, Hardware Optimization* Apr 2026

- Built a high-performance image processing library from scratch; implemented shared memory tiling algorithms to bypass global memory bottlenecks and maximize GPU thread throughput.

EfficientAD Anomaly Detector | *PyTorch, CNN Architecture* Mar 2026

- Built an end-to-end industrial anomaly detection pipeline in PyTorch, optimizing the student/autoencoder training loop to achieve sub-1ms performance and an AUROC of 0.88.