

Mathias Petersen

GENERAL ENGINEERING / SOFTWARE CO-OP

Surrey, BC | mathias@pepservices.com
778-814-7769 | linkedin.com/in/mathiasdp
github.com/SoZ0 | github.com/Prometheus-Dynamics

Mechatronics Systems Engineering Student | Founder & Lead Engineer | Robotics, Software, Systems

FOCUS			
Technical founder and SFU mechatronics student with hands-on ownership across robotics hardware/software, embedded Linux, Rust services, computer vision, web tooling, Kubernetes/Linux infrastructure, and field support.			
Product shipped	Full product stack	50-device build	~25 units sold
robotics camera sold to teams	PCB, CAD, OS, backend, UI, support	initial hardware production run	customer/team adoption

TARGET STACK

Robotics / Product	Software
FRC systems, CV pipelines, sensors, controls, autonomous routines, bring-up, product assembly, support	Rust, C++, Java, Python, TypeScript/JavaScript, Svelte, React, Tauri, REST APIs
Embedded / Linux	Security / Infrastructure
Buildroot/Gaia, custom OS images, Linux drivers, CSI cameras, Docker, K3S, Longhorn, CloudNativePG	Security+, Linux administration, OWASP/ZAP, risk assessment, auth/RBAC, networking, firewalls

RELEVANT EXPERIENCE

Founder & Lead Engineer Prometheus Dynamics LLP	Mar 2023 - Present
- Founded and lead a robotics hardware/software company building affordable high-performance vision and control systems for FRC teams and education. - Designed and shipped HVS-Raze/Helios across PCB/CAD, embedded Linux, Rust backend services, Svelte UI, camera integration, assembly, testing, manufacturing coordination, and customer support. - Led a 50-unit initial production run through multiple prototype revisions; sold approximately 25 total units and supported/sponsored FRC teams during the season.	
Tech Mentor & Former Software Lead FRC 6390	Oct 2018 - Present
- Mentor students across programming, electrical, mechanical, soldering, troubleshooting, controls, and match-season debugging. - As student lead, built reusable Java control layers and autonomous tooling that helped reduce robot software bring-up from weeks to days.	
Robotics Instructor & Tech Lead Zebra Robotics / FVCA	Jul 2023 - Jun 2024
Taught robotics and programming to grades 1-12; deployed classroom systems including digital signage, cloud storage, CanvasLMS/K3S, and internal management tooling.	
IT Technician Kelly Services Canada	Mar 2024 - Jan 2026
Completed contract site installations for POS, VoIP, printers, monitors, workstations, diagnostics, packaging, and deployment support across banking and small-business locations.	

SELECTED PROJECT EVIDENCE + LINKS

HVS-Raze / Helios	Helios
Shipped CM5 robotics vision camera: custom PCB/CAD, Rust backend, Svelte UI, camera driver work, assembly, and support. Find: prometheus-dynamics.ca/products/helios-vision-system-raze	Custom embedded Linux OS/image stack for Prometheus camera hardware, CM5 deployment, backend services, UI assets, and CV runtime. Find: github.com/Prometheus-Dynamics/Helios
Daedalus	Eidos
Typed dataflow graph runtime for deterministic planning, CPU/GPU execution paths, plugin nodes, telemetry, and FFI/SDK boundaries. Find: github.com/Prometheus-Dynamics/Daedalus	Rust CV/image-processing workspace for ArUco, calibration, contours, detectors, filters, geometry, frames, masks, and temporal processing. Find: private: Prometheus-Dynamics/Eidos; demo available
Styx	Orion
Sync-first zero-copy Rust media pipeline stack for capture, decode, transform, graph integration, recording, and service workflows. Find: github.com/Prometheus-Dynamics/Styx	Distributed node runtime with client SDK, operator CLI, control/data-plane split, transports, observability, auth, and audit surfaces. Find: github.com/Prometheus-Dynamics/Orion
Lemnos	FRC-Athena
Hardware discovery, driver matching, and runtime interaction layer across GPIO, PWM, I2C, SPI, UART, USB, and Linux backends. Find: github.com/Prometheus-Dynamics/Lemnos	Reusable Java FRC robotics framework: control layers, vendor integration, examples, docs, and faster robot software bring-up. Find: github.com/FRC-6390/FRC-Athena

ADDITIONAL EXPERIENCE

Byte Camp Lead Instructor	Jul 2022 - Apr 2023	McDonald's Crew Trainer	Aug 2021 - Nov 2022
Taught Blender, Godot, Scratch, programming fundamentals, 3D/game projects, and youth technical camps.		Trained new staff, handled fast-paced service operations, safety/sanitation, and practical team communication.	

EDUCATION & CREDENTIALS

Simon Fraser University	CompTIA Security+	BrainStation	North Surrey Secondary
BASc, Mechatronics Systems Engineering Started Spring 2025 - Expected 2029/2030 Co-op eligible	SY0-701 Active Jul 2024 - Jul 2027	Cybersecurity Diploma Completed Jul 2024	Honours Graduate Completed Jun 2023