

Kaan Keskindil

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EDUCATION

Memorial University of Newfoundland

Bachelor of Electrical Engineering (Co-Op) - Term 4 (Year 2)

St. John's, NL

Graduation Date: May 2029

Seeking Co-Op/Internships: Sep-Dec. 2026

SUMMARY

Electrical Engineering student at Memorial University with hands-on experience in autonomous systems research, embedded hardware, and scientific software development. Skilled in C++, Python, and MATLAB, with experience in maritime autonomy research, vessel geometry processing, and sensor-based PID control systems. Passionate about applying R&D to real-world engineering challenges across both hardware and software domains.

WORK EXPERIENCE

JVPLabs

St. John's, NL

Verification and Validation Student

May 2025 - Aug 2025

- Refactored **Python-based data tools** into a structured JupyterLab app, reorganizing legacy scripts into modular components for log retrieval, bin-file processing, grid-overlay visualization, and pulsation-detection analysis using **NumPy**, **Pandas**, **Matplotlib**, and Jupyter widgets.
- Performed **firmware updates** and device configuration on **Jetson Nano** through **Linux**, loading new builds, reconfiguring system settings, and verifying functionality through terminal commands and data-transfer checks (FileZilla, logs, device UI).
- Designed and **executed bring-up, stress, and regression tests** on prototype medical hardware, validating power, I²C sensor connections, and IR-camera acquisition; analyzed Linux logs to **isolate wiring faults** and confirmed fixes with repeated test cycles.
- Standardized FAT and end-of-line testing protocols, improving post-assembly quality control and training new QA engineers through technical documentation.

Ocean Engineering Research Center

St. John's, NL

MASS Research Student, Supervised by Dr. Wei Qiu

Jan 2026 - May 2026

- Developed a **C++/OpenGL desktop application** for ship hull visualization and hydrodynamic preprocessing, parsing IGES files to render NURBS surfaces, control nets, and surface normals in an interactive 3D viewer; integrated with a frequency-domain hydrodynamic solver developed by Dr. Wei Qiu to ingest vessel geometry and mass-distribution inputs and display motion RAOs, drift forces, and wave-induced loads.
- Authored a large-scale research report on **Maritime Autonomous Surface Ship (MASS)** connectivity requirements, evaluating communication needs across key operational phases to inform recommendations relevant to IMO and Transport Canada aligned autonomous vessel frameworks.
- Designed and built an autonomous model vessel using Arduino microcontrollers and LiDAR sensors, completing hardware design, wiring schematics, and embedded **C++ PID-based control** for wall tracking, obstacle avoidance, and course correction in tank-testing environments.

SKILLS & INTERESTS

Skills: Python, C++, PSQL, Bash, MATLAB, PSPICE, PCB Design, Git, AutoCAD, Data Management & Visualization Tools (PyTorch, Pandas, Numpy)

Interests: Autonomous Systems, Maritime Engineering, Embedded Hardware, Robotics & Control

Languages: Turkish, English (Native) | Spanish, French, Japanese (Limited Proficiency)

STUDENT TEAM EXPERIENCE

MUN Quant Society (MQS)

St. John's, NL

Data & Infrastructure Team Director

Sep 2025 - Present

- Directed the development of the Society's end-to-end trading infrastructure, including real-time ingestion pipelines, **PostgreSQL storage**, and GCP-deployed microservices powering high-frequency trading, backtesting, and sentiment-analysis systems.
- Developed scalable Python/SQL data tooling with **CI/CD (GitHub Actions)**, **NLP pipelines (PyTorch)**, and transformer hyperparameter tuning, ensuring low-latency aggregation and robust analysis of multi-source market feeds

Paradigm Engineering

St. John's, NL

Electrical Team Member

Jan 2026 - Present

- Designed a **revised STM32-based vehicle control PCB** in KiCad with USB-UART, ST-LINK/JTAG peripherals, FDCAN, voltage regulation, decoupling networks, and test interfaces, **reducing PCB footprint** and improving signal and power integrity through optimized routing and power distribution.
- Designed a multi-rail vehicle **power distribution PCB** in KiCad, developing schematics and PCB layouts implementing switching regulators, filtering networks, and feedback control circuitry to generate regulated **48 V, 24 V, 12 V, 5 V, and 3.3 V rails for embedded control electronics**, steering systems, and auxiliary subsystems.
- Developed **embedded firmware** in C for STM32 microcontrollers implementing **PWM-based motor braking control**, enabling real-time actuator response and controlled braking behavior during subsystem integration and vehicle testing.
- Performed **PCB bring-up and electrical validation** of custom hardware using oscilloscopes and multimeters to verify voltage rails, debug communication interfaces, and troubleshoot signal integrity issues during **embedded hardware integration and testing**.