Kieran Lachmansingh

Graduate Student Specializing in High Performance Computing with Robotics

Hello! I'm a passionate robotics and high-performance computing graduate exploring the frontier between intelligent algorithms, real-time systems, and scalable design.

@ kieran.lachmansingh@gmail.com   in kieranlachmansingh   ○ 18ksl   ⚲ Ontario, Canada

SKILLS

Programming	*Robotics Middleware*	*Modelling & Design*	*Media & Tools*
C++, C, Python, MATLAB/Simulink	ROS & ROS2	3D Modelling, Inkscape	Camtasia

EDUCATION

MASc. High Performance Computing & Robotics

🏛 Queen's University   📅 2023 – 2026 (expected)
- Current GPA: 4.08

BASc. Electrical Engineering

🏛 Queen's University   📅 2018 – 2023
- Dean's Scholar
- Graduated with First Class Honours
- GPA: 3.68

PUBLICATIONS

SHARP: Supercomputing for High-Speed Avoidance and Reactive Planning for Robotics

🏢 International Conference on Robotics and Automation Submission   📅 Sep 2025
Keywords: *HPC, Robotics, Cloud Computing*

- Demonstrated that high-performance computing can enable millisecond-level reaction times for real-time robot motion planning.
- Showed that offloading heavy planning to HPC remains feasible despite network latency, achieving 23–30 ms planning times and 85–88% avoidance success.
- Provided a reproducible evaluation method and highlighted how hybrid onboard/HPC architectures can improve responsiveness in dynamic environments.

EXPERIENCE

Student Engineering Intern

🏢 Ontario Power Generation   📅 May 2021 – May 2022   ⚲ Pickering, Ontario
Keywords: *Nuclear Power, Computer Systems*

- Created programs to automate onerous tasks within Safety Related Systems Section.
- Coordinated Station Condition Reports for Electrical Computers and Control Department.
- Performed preliminary testing and preparation of test reports on Darlington Digital Control Computers project.

OTHER ACTIVITIES AND PROJECTS

F1 Tenth
from Sep 2025 – General Perception Member

Robotics Capstone
Sep 2022 – Apr 2023

Queen's IT Operations
May 2020 – General Member

Musician
8 Years of Piano, 4 Years of Saxophone, Guitar

Athletics
15 Years of Karate, 4 Years of Weightlifting

AWARDS

1st Degree Black Belt   **First Class Honours**   **Dean's Scholar**

LANGUAGES

English