Keyon Jerome

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Skills

- **Languages:** C++, Python, C, CMake, Java, Bash, HTML, CSS, JavaScript, TypeScript, SQL, Go
- **Frameworks:** Robot Operating System (ROS), Flutter, Angular, OpenCV, Node.js, Flask
- **Tools:** Linux, Git, Android, RViz, Gazebo, Docker, SOLIDWORKS, Keil RTX5

Education

University of Waterloo – BASc. in Mechatronics Engineering, Co-op Sep 2020 – May 2025
Relevant Coursework: Digital Computation (C++), Data Structures and Algorithms (C++), Real-Time Systems (C)

Experience

Software Engineering Intern – Tesla – Palo Alto, CA Sep 2022 – Present
- Building mobile robotics software to control material movement.

Self-Driving Sensor Software Developer Co-op – Blackberry - Waterloo, ON Jan 2022 – Apr 2022
- Developed Autonomous Valet Parking technology with ROS2 on QNX embedded operating systems for vehicles.
- Translated BlackBerry's self-driving framework in C++ to build on QNX.
- Developed QNX-specific CMake macros for building and debugging ROS2 packages.
- Added dependency fixes directly to ROS source code to increase ROS build flexibility on different operating systems.

Media & USB Infotainment Developer Co-op – Ford Motor Company – Waterloo, ON May 2021 – Aug 2021
- Developed logic infrastructure in Kotlin and Java for an Android embedded system environment.
- Synchronized song and media playback speeds across USB media playback app, Android system, and other applications, connecting vendor implementation with Ford-specific tooling.
- Interfaced with Android debugging tools (ADB) to create media playback tools for when USB devices are plugged in.

Software Developer Co-op – STEP Software – London, ON Jun 2019
- Developed a private note-taking web app using Angular, PHP, and MySQL.
- Implemented a phpMyAdmin server backend complete with client-side password hashing and SQL querying.

Extracurriculars

Software Team Co-Lead, Member – University of Waterloo Robotics Team Jan 2022 – Present
- Leading ROS2 development for UW Robotics' 2022 Mars Rover robot, running on a Jetson AGX Xavier.
- Developed simulation and robotic control configuration for robotic arm actuator package using ros2_control library, Gazebo, and RViz, and URDF files.
- Developed ROS2 C++ robot utilities package for consolidating transmission, joint, and actuator data.

Projects

Robotics Computer Vision - BOS Raspberry Pi Contest Winner – OpenCV, Python
- Implemented real-time object detection using OpenCV (Python) on a Raspberry Pi with a Tensorflow prediction model.
- Created PID protocols for 125-lb field robot to autonomously drive to game objects.
- Trained and generated a custom machine-learning model for game object detection using Microsoft's CustomVision.AI.

ROS2 Smart Home – ROS Galactic, C++, pigpio, Node.js
- Created 24V LED strip controller using logic-level MOSFETs running on a Raspberry Pi with ROS2 in C++.
- Implemented pigpio C library to apply pulse-width modulation (PWM) for accurate control of LED strip color.
- Created Node.js web app for automatically publishing color changes to ROS2 nodes via rosbridge.js.