Waleed **Ahmed**

🌐 wahmed.dev   ✉ waleed@wahmed.dev   in waleed-a   ⌂ w29ahmed

Skills

Languages: C++, C, Python, JavaScript, Java, Rust, C#, HTML, CSS, SQL, QML, Assembly
Libraries & Frameworks: ROS, OpenCV, Qt, Node, React, Express, Flask, Google Test, Thrift, Hadoop, Kafka
Tools & Technologies: Git, Linux, QNX, Perforce, SVN, MongoDB, Jenkins, Docker, LaTeX, Jira

Experience

Zoox   *Foster City, CA*
Software Engineer   *Jun 2022 – Present*
- Developing software tooling and analytics infrastructure to monitor and improve test platform health
- Building a high-level understanding of overall system design and component interaction to help guide requirements and methodology for functional and performance sign-off while providing support to teams using an integration testing framework

Zoox   *Foster City, CA*
Software Engineering Intern   *Sep 2021 – Dec 2021*
- Developed software features for an integration testing framework capable of running autonomy software on representative hardware
- Designed and developed an improved sensor playback system that enabled more efficient and accurate playback during integration tests

Huawei   *Toronto, ON*
Autonomous Vehicles Software Engineering Intern   *Sep 2020 – Dec 2020*
- Developed a unit test suite for a Frenét frame motion planning stack with **90%** code coverage using **Google Test**
- Designed and implemented a path-building library using **C++** to construct a variety of reference paths to test planning algorithms on
- Used **C++** and **Matplotlib** to extract insights from vehicle trajectory data that helped expose flaws in motion planning algorithms

Qualcomm   *Toronto, ON*
Automotive ADAS Software Engineering Intern   *Jan 2020 – Apr 2020*
- Developed system and application software for an ADAS and autonomous driving platform in **C/C++**
- Accelerated performance of a **computer vision SDK** by an average of **20x** by leveraging available hardware and software architecture in automotive focused Snapdragon SoCs

Christie Digital   *Kitchener, ON*
Software Engineering Intern   *May 2019 – Aug 2019*
- Worked closely with QA and UI/UX designers for user interface development and maintenance to meet release deadlines across a wide variety of platforms using the **Qt** framework in **C++** and **QML**
- Significantly reduced the effort needed to maintain code health through software architecture redesign and setup of a continuous integration pipeline on a **Jenkins** build server that included unit tests with **90%** code coverage using **Google Test**

Synaptive Medical   *Toronto, ON*
Video Software Engineering Intern   *Sep 2018 – Dec 2018*
- Improved visibility of biological tissue during surgical procedures through color manipulation using **C++ (OpenCV)** and **C#**
- Enabled intuitive usage of a color manipulation algorithm through a web interface built with **JavaScript**, **HTML**, and **CSS**
- Post-processed image data in **Python** using **Pandas**, **Numpy**, and **Matplotlib** to analyze color manipulation

Projects

Vizia ⌂   *Capstone Design Project*
- Wearable glasses that can extract and communicate information from an image to a visually impaired user through audio transcription
- Consists of glasses with **Raspberry Pi** for image capture, **Flask** web app for computer vision processing, and an **iOS** app for audio playback

Autonomous Robot Racing ⌂   *UW Robotics*
- Managed development for a robot that competed in the **International Autonomous Robot Racing Competition**
- Developed software architecture in **ROS** and **C++** for perception, mapping, and path planning using a stereo camera, IMU, and LiDAR

Education

University of Waterloo
B.ASc Computer Engineering   *Sep 2017 – Apr 2022*
- Relevant Coursework: Distributed Computing, Robot Dynamics & Control, Programming for Performance, Autonomous Vehicles, Computer Networks, Database Systems, Operating Systems, Compilers, Systems Programming & Concurrency, Algorithms & Data Structures