Paolo Torres

2B Mechatronics Engineering, University of Waterloo

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Skills

Languages/Tech: C/C++, C#, XAML, .NET, JavaScript/Node.js/JSON, HTML/CSS, Python, Arduino
Libraries/APIs: OpenCV, scikit-learn, Tkinter, jQuery, RESTful APIs, Twitter API, Riot Games API
Tools: Visual Studio, Git, VSTS, PowerShell, MSBuild, Azure Kusto, Power BI, Terminal, Linux, Jira

Experience

Software Engineering Intern - Microsoft — May 2018 - Aug 2018

- Developed Visual Studio IDE features in C++, C#, and XAML, shipped to over **5 million active users**
- Added **telemetry analytics** and full test coverage to track success metrics and increase robustness
- Utilized **Git** and **VSTS** to track work, participated in weekly sprint meetings, and carried out sprint demos

Robotics Engineering Intern - Aeryon Labs — Sep 2017 - Dec 2017

- Developed fixes on **IMU sensors** and **MCUs** to improve temperature reading and flight performance in C
- Fixed **memory management** issues in C++ and CUDA on Nvidia Jetson TK1 to reduce payload crashes
- Patched 50+ bugs and implemented feature requests in Jira related to controls, computer vision, and UI

Software Developer Intern - Solink — Jan 2017 - Apr 2017

- Developed central **data source connector** in JavaScript for 10,000+ POS device transactions a day
- Wrote **software tools** and automation scripts through Scrum/Agile practices saving hours of work
- Prototyped and pitched computer vision implementation to initiate early development of new features

Embedded Developer - Waterloo Aerial Robotics Group — Sep 2016 - Dec 2016

- Designed a **debugging system** in C for the GPS to prevent coordinates from incorrectly locking values
- Utilized integer-based commands to control decision-making for the aircraft's probe drop mechanism
- Employed pulse width modulation code on mounted camera to manage payload imaging for competition

Programming Instructor - Addity — Jul 2016 - Aug 2016

- Implemented Lego Mindstorms activities and taught 40+ students about the **fundamentals of robotics**
- Configured Gradle automation system with Windows batch files to build and host project workspaces
- Led the WordPress course for 30+ students and integrated HTML and CSS to deepen the program

Computer Technician - Y2K Computers — Jul 2015 - Aug 2015

- Prioritized client specifications and built custom-made desktops and laptops to **boost company revenue**
- Utilized BIOS firmware for OS updating and component testing to improve overall performance
- Applied troubleshooting to effectively repair system errors, intrusive software, and hard drive failures

Projects

Vehicle Tracker - (C++, OpenCV)

- Created an application enabling users to upload traffic video and have the data analyzed at 96% accuracy
- Employed **computer vision** and image processing techniques to separate static from dynamic instances

Sign Language Translator - CUHacking (Python)

- Built a sign language recognition system via Leap Motion hardware with incorporated video chat
- Won Indico's Challenge for **best use of machine learning** through SVMs and the scikit-learn library

Pathfinding Simulator - (C++)

- Implemented **A* search algorithm** to simulate closest path robotic navigation with obstacle avoidance
- Allowed users to create the environment and visualize movement and heuristics via binary representation

Toast the North - Hack the North (Arduino, Python)

- Developed a system that allows users to create their own design and have it come to life through toast
- **Wrote all the code** consisting of the heat control mechanism, Processing software, and Tkinter GUI