Paolo **Torres**

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🔧 Skills

Languages/Tech: C/C++, Python, Arduino, JavaScript/Node.js/JSON, HTML/CSS/Bootstrap
Libraries/APIs: OpenCV, scikit-learn, Tkinter, jQuery, RESTful APIs, Twitter API, Riot Games API
Tools: Linux, Terminal, Jira, Git, SVN, Jenkins, Visual Studio, Eclipse, SolidWorks, AutoCAD

💼 Experience

Robotics Engineering Intern - Aeryon Labs   Sep 2017 - Dec 2017

- Developed fixes on LSM6DS3 **IMU** and F28069 **MCU** to improve temperature reading and flight in C
- Fixed **memory management** issues in **C++** and CUDA on Nvidia Jetson TK1 to reduce payload crashes
- Patched 100+ bugs and implemented feature requests in Jira related to **controls**, computer vision, and UI

Software Developer - WATonomous   May 2017 - Aug 2017

- Designed a **detection model** in C++ and OpenCV that processes camera and LIDAR to track objects
- Integrated with a neural network program for shape-based identification and image-based classification
- Researched tracking and detection techniques to merge the perception module into the software system

Software Developer Intern - Solink   Jan 2017 - Apr 2017

- Developed central **data source connector** in Node.js 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 technology 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