Paula Perdomo

Computer Engineering Student

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Education

University of Toronto *Toronto, ON, CA*
Bachelor of Applied Science & Engineering: Computer Engineering 2019 - 2024
Minor in Engineering Business & Certificate in Artificial Intelligence
Awards: Edward S. Rogers Sr. Admissions Scholarship, Dean's Merit Award, 2020 Fall-Dean's Honours List, and Natural Sciences and Engineering Research Council (NSERC) Undergraduate Student Awardee

Experience

Google – Software Engineer Intern *Seattle, WA, USA*
September 2022 – December 2022
Fuchsia Operating Systems Team Intern

- Developed USB peripheral tests for Fuchsia OS to improve the quality and reliability of the USB stack and assure correct data transfers for control, interrupt, and bulk endpoints. Ensured correct USB implementation for 3P driver implementers developing on devices carrying Fuchsia OS
- Implemented factory setting command line tools to help Fuchsia OS developers obtain hardware and system information

Microsoft – Software Engineer Intern *Redmond, WA, USA*
May 2022 – August 2022
Platform Firmware and Drivers Team Intern

- Implemented the Monte Carlo Performance Profiler in C code for the Unified Extensible Firmware Interface (UEFI), with the goal of optimizing the pre-OS Boot Flow performance and runtime
- Strengthened the UEFI boot flow by accurately modelling the UEFI boot phases with probability and CPU timing. Continuation of the project is projected to reduce UEFI boot flow by 40%

University of Toronto – Undergraduate Student Researcher *Toronto, ON, CA*
May 2021- September 2021
Verilog to Routing (VTR) - Open-Source CAD Flow for FPGA Research

- Supported advanced FPGA research under the supervision of Professor Vaughn Betz, by assisting with new feature implementation, quality of results, documentation, and user performance
- Developed Manual Moves feature in VTR, allowing users to manually specify moves in placement for FPGA architecture and design
  Documentation: docs.verilogtorouting.org/en/latest/vpr/graphics/#manual-moves.

aUToronto – University of Toronto's Self Driving Car Team – Software Engineer
August 2020 – January 2022 *Toronto, ON, CA*

- Researching efficiency of path finding algorithms for planning and navigation development
- Collaborated with team members to deliver 'ZeuShare'; prototype that improves accessibility design in transportation through ADA regulations and social responsibility. Placed 1st out of 8 North American universities on the Social Responsibility Report for Year 3 SAE AutoDrive Challenge.

Projects

Maps by KNP | Project GitHub: github.com/PaulaPerdomo/MAPS-by-KNP

- Created a Google Maps inspired GIS software using OpenStreetMap database API (OSM Data), C++ programming language, GTK++, and EZGL Graphics Library.
- Made use of multiple graph and path finding algorithms to solve the Traveling Salesman Problem.

Monte Carlo Performance Profiler – Associated with Microsoft

- Created a timer driver performance profiler that models the UEFI boot phases to understand the pre-OS code flow. The driver makes use of the ARM Architecture_64 register set, with emphasis on the Link Register and Program Counter to model CPU usage and performance.
- Tested code using EFI Development Kit (EV2 board) by flashing UEFI and SAM to track the driver's development.

Sliding Puzzle Game | Project GitHub: github.com/PaulaPerdomo/SlidingPuzzle

- Created a sliding puzzle game inspired by the Picture Puzzle Windows Desktop Gadget game implemented on a DE1-SoC Computer. Includes multiple game modes and use of hardware (A9 private timer, Interrupts, PS/2 ports, HEX and VGA displays)

For more projects, check my GitHub above!

Skills

Technical Skills: C/C++, Rust, Java, Python, SQL, TensorFlow, CSS & HTML, ARM Assembly, Verilog, Quartus Prime, Model Sim, Git, Linux / UNIX Systems, Microsoft Office.
Intrapersonal Skills: Teamwork Management, Leadership, Communication, Strong Work Ethic, Bilingual (Spanish – fluent, English – fluent), Goal-Oriented, Task Driven.