Samuel Zheng

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Experience

FPGA IP Software Engineer, Intel – Toronto, ON   May 2021 – Sept 2022 (Intern), June 2023 – Present
- Implemented DRAM margining tools and algorithms for customer and internal use across multiple memory protocols and FPGA families
- Development and debugging of simulation and hardware IPs, as well as scripts to optimize hardware testing workflows and assist field engineering debug efforts
- Proactive management of simulation and hardware regression tests, including the development of hardware regression tests during new silicon power-on; analyzed and debugged failures to maintain regression health
- Part of the hardware lab management team, including bring-up of prototype silicon and associated development hardware
- Led cross-functional meetings with field engineering to improve user experience of hardware tools
- Improved UI design on customer-facing and internal tools with a focus on accessibility
- Oversaw the work of an intern, handling mentorship and code reviews
- Collaborated with teams in a remote setting and over timezone differences

Projects

Deep Learning for Cardiac MRI Image Segmentation   github.com/iWebster28/cardiac-mri-segmentation
- Researched the prospect of image segmentation on cardiac MRI images of orientations lacking in published research, from the labelling of raw MRI data to implementing deep learning models
- Achieved an average 5% increase in segmentation accuracy compared to standard segmentation methods

Motion-Controlled Game on FPGA   github.com/NicholasTran/G8_SwishSwooshSwordSimulator
- Collaborated in a team of 4 to create a motion-controlled game on a Xilinx FPGA board
- Developed a custom audio IP that implemented pulse wave modulation in Verilog

Pac-Man Robot AI   github.com/calvinkma/UTRAPacbotController
- Implemented and optimized a custom A* pathfinding algorithm for a Pac-Man robot to autonomously navigate through a physical Pac-Man arena while completing standard game objectives

PCB Component Modelling for Heron MK.II Cube Satellite   github.com/utat-ss/HERON-pcbs
- Developed several arcade-style Unity games in genres such as platforming, puzzle, and shooter

Miscellaneous Unity Game Projects   lostdirectory.itch.io
- Developed several arcade-style Unity games in genres such as platforming, puzzle, and shooter

Educational Game Videos   youtube.com/@oneminxiv
- Produced short videos for players of a game community, including motion graphics design and video editing

Skills

Languages: C, C++, C#, Verilog, Python, TCL, Perl
Other: Git, Perforce, Bash, Linux, Unity, Fusion 360, Altium Designer
Spoken Languages: English/Chinese Bilingual, Conversational Japanese

Education

University of Toronto – BASc in Computer Engineering   May 2023
- GPA: 3.94, High Honours