Guanxiong Chen

Computer Engineering at the University of British Columbia

CONTACT INFORMATION

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TECHNICAL SKILLS

Electrical & Mechanical

- Circuit assembly and debugging
- Circuit Simulation
- MATLAB and Simulink
- SolidWorks

Computer

- C and C++
- Assembly
- SystemVerilog
- Mathematica
- Git
- R
- Linux
- Excel
- Html and CSS
- Python
- Java

ACADEMIC STATUS

Academic Program

- 9 of 12 academic terms completed
- Anticipated date of graduation: May, 2021

Co-op/Internship Status

- Available for 4 months beginning May, 2020

WORK EXPERIENCE

Research Volunteer at UBC SPIN (Sensory Perception & Interaction Research Group) **September 2019 – Present**

- Volunteering under the supervision of Dr. Soheil Kianzad and Prof. Karon Maclean
- Programming a Raspeberry Pi for accurate localization of robots

NSERC USRA Research Student at UBC RESESS (The Reliable, Secure, and Sustainable Software Lab) **May 2019 – August 2019**

- Analyzed malware samples from the Google Play store
- Ran open-source malware detection tools on Android app samples collected from AndroZoo, VirusTotal and various antivirus blogs
- Wrote up scripts to automate tools' analysis on over 1,000 samples inside virtual machines hosted by remote servers
- Analyzed tools' performance results

Digital Systems Design (CPEN 311) Teaching Assistant **September 2018 – December 2018**

- Answered students' questions on Piazza related to course material and logistics; made over 130 contributions so far
- Addressed students' confusions related to lab assignments (hardware specification, schematic drawings, Verilog language construct, grading criteria) in 3-hour lab sessions each week
- Marked students' exams and lab assignments

TECHNICAL PROJECTS

Virtual Memory System (CPEN 331, The University of British Columbia) **December 2019**

- Implemented a virtual memory system with a core map, per-process page tables, related system calls on a teaching operating system (OS/161)

Eight Queens Puzzle Solver (CPSC 110, The University of British Columbia) **June 2018**

- Implemented a function independently to solve the eight queens puzzle recursively in Dr. Racket

Simple Image Processing SoC (CPEN 311, The University of British Columbia) **March 2018**

- Implemented a system used for accelerating image rotation on a DE1-SoC board independently over 2 weeks
- Used Intel Platform Designer to build the system consisting of a NIOS II-e processor, an Avalon Interface, a RAM, a VGA core, and FPGA-based accelerators
- Wrote accelerators in SystemVerilog
- Wrote code in C to test accelerators' performance

2-DOF PID-controlled Robotic Arm (ELEC 391, The University of British Columbia) **January 2018 – April 2018**

- Designed a control system for a 2-DOF robotic arm with a partner to complete a laser lightshow
- Simulated the controller and plants in Simulink and MATLAB
- Measured DC motors' parameters and compared their performances
- Visualized performance test results with MATLAB, and presented to 3 teammates and the instructor
- Implemented PID control algorithms in C++ on a ATmega2560 microprocessor

Autonomous Rover (ELEC 291, The University of British Columbia) **March 2017 – April 2017**

- Programmed a 8051 microcontroller in C to make a robotic vehicle follow designated paths constructed from AC-current-carrying guide wires autonomously
- Assembled the vehicle's circuit with multiple IC components (Op-amps, voltage regulators, H-bridges, etc.)
- Designed and implemented algorithms for the vehicle to receive commands from guide wires, using principles similar to the UART protocol

VOLUNTEER WORK EXPERIENCE

UBC Student Housing and Hospitality Services (Vancouver, Canada) **August 2016 – September 2017**

Opening Day Volunteer

- Assisted the university residence's front desk team to sort students' luggage on the Move-in Day efficiently
- Answered questions from first year students regarding residential issues in professional and welcoming manner

EDUCATION

The University of British Columbia **September 2015 – May 2021**

- Bachelor of Applied Science / Computer Engineering
- Accumulative GPA: 89% (A)

AWARDS

Jim and Helen Hill Memorial Service Award **2018**

- The award is given to students who demonstrated leadership through volunteerism.

Trek Excellence Scholarship **2017**

- The Scholarships are offered every year to students in the top 5% of their undergraduate year, faculty, and school.

PROFESSIONAL AFFILIATIONS

APEGBC Membership 2015 - Present