

# GUANXIONG CHEN

B.A.Sc. STUDENT · COMPUTER ENGINEERING

University of British Columbia

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## Education

### University of British Columbia

BACHELOR OF APPLIED SCIENCE IN COMPUTER ENGINEERING

- GPA: 89%

Vancouver, BC, Canada

September 2015 - Present

## Research Experience

### VCR (Verification, Control, Robotics) Group, University of British Columbia

Vancouver, BC

ADVISOR: PROF. IAN MITCHELL

May 2020 - Present

- Completed literature review on paper “Habitat: A Platform for Embodied AI Research”
- Building an interface between ROS and the Habitat AI framework
- Investigating physics effects in the Habitat Sim simulator

### SPIN (Sensory, Perception and Interaction) Group, University of British Columbia

Vancouver, BC

CO-ADVISORS: DR. SOHEIL KIANZAD, PROF. KARON MACLEAN

Sept. 2019 - Present

- Working on paper: “Haptic Geometric Relationships in Physical Drawing” (working title)
- Completed literature review of papers on sketching and haptic pen
- Wrote Python code to allow users define geometric relations between objects in CAD sketches drawn with a haptic pen
- Designed experiments for the user study

### RESESS (Reliable, Secure, and Sustainable Software) Lab, University of British Columbia)

Vancouver, BC

CO-ADVISORS: MR. MICHAEL CAO, PROF. JULIA RUBIN

May 2019 - Aug. 2019

- Analyzed malware samples from the Google Play store
- Ran DroidNative (a ML-based malware detection tool) on Android app samples
- Preprocessed and extracted features from apps for training in DroidNative
- Wrote Python scripts to automate experiment deployment on remote servers

## Coursework and Personal Projects

### The Animated Racoon

COURSEWORK FOR CPSC 314: COMPUTER GRAPHICS

Oct. 2020

- Wrote code in JavaScript and GLSL to render an animated racoon

### Jack in a Box (A Blackjack Game Machine)

COURSEWORK FOR CPEN 391: COMPUTER ENGINEERING DESIGN STUDIO II

Mar. 2020

- Implemented a ML-based image recognition pipeline on a Raspberry Pi to recognize poker cards' face values
- Collected and preprocessed data for training and testing
- Implemented the game's mechanics in a bare-metal program targeted for an ARM processor with a partner

### OS/161 Virtual Memory System

COURSEWORK FOR CPEN 331: OPERATING SYSTEMS

Dec. 2019

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

### Simple Image Processing SoC

COURSEWORK FOR CPEN 311: DIGITAL SYSTEMS DESIGN

Mar. 2018

- Implemented independently an accelerator used for accelerating affine rotations of 2D images on a FPGA chip
- Built the system with EDA tools from basic blocks - a soft-core CPU, memories, and the accelerator
- Wrote code in C to evaluate the accelerator's speed-up

## Awards, Fellowships, & Grants \_\_\_\_\_

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

DEPT. OF ELECTRICAL AND COMPUTER ENGINEERING, UBC

2018

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

### **Trek Excellence Scholarship**

UNIVERSITY OF BRITISH COLUMBIA

2017

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

## Teaching Experience \_\_\_\_\_

Fall 2020    **CPEN 331: Operating Systems**, Teaching Assistant

Fall 2018    **CPEN 311: Digital Systems Design**, Teaching Assistant

## Outreach & Professional Development \_\_\_\_\_

### SERVICE AND OUTREACH

2017    **UBC Opening and Move-in Day**, Move-in Volunteer

2016    **UBC AMS Bike Kitchen Daily Maintainance**, Bike Repair Volunteer

### PROFESSIONAL MEMBERSHIPS

Engineers and Geoscientists BC