Tung Lam Hoang **Computer Engineering Student**

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https://tunglam2101.github.io

TECHNICAL SKILLS

Programming Languages: C, C++, Java, Python**,** Verilog, SystemVerilog, ARM Assembly**,** R, HTML

Software Knowledge: IntelliJ, Microsoft Visual Studio, Qt Creator, Arduino IDE, RStudio, ModelSim, Quartus II, Intel Monitor Program, JUnit, Valgrind, Bootstrap 4, Git, Apache 2, Microsoft Office Suite, Windows OS, Linux (Ubuntu)

Hardware/Lab Knowledge: Soldering, Logic designing, Bread-boarding, Operating lab equipment (Oscilloscope, Multimeter, etc.), Preparing & presenting lab reports

EDUCATION

University of British Columbia **September, 2016 – May, 2022** (Expected)
Bachelor of Applied Science - Computer Engineering
Co-op: Completed 0/4 work terms; Available 4-8 months beginning January 2020
CGPA: 79.2%
Key Computer Engineering Courses:

- Digital Systems Design
- Basic Algorithms and Data Structures
- Circuit Analysis I
- Introduction to Computation in Engineering Design
- Basics of Computer Systems
- Principle of Software Construction
- Introduction to Microcomputers

TECHNICAL PROJECTS

Breaker, FPT Telecom (IOT Department) **August, 2019**
https://github.com/tunglam2101/breaker-embedded

- Devised a simple game on a development kit running on **ARM Cortex-M3 (STM32L)** that simulates the game Breakout (Brick Breaker). The game's objective is to clear all the remaining bricks that appear on a LCD screen.
- Implemented the program using **Qt Creator** and **Object-oriented C/C++ (GNU Arm Embedded Toolchain)** based on **Event-driven architecture**. Integrated the program into a written framework called **Active Kernel**.
- Ensured program's stability by using **Valgrind** to carefully fix any memory leakage and inspected debugging logs to detect any long-running task that might enable fatal errors.

ARC4 Decryption, University of British Columbia **June, 2019**
https://github.com/tunglam2101/arc4-decryption

- Devised an ARC4 Decryption Circuit in **SystemVerilog**. Deployed and tested on a **DE1-SoC** board running on **ARM Cortex-A9** using **Quartus II 17.1**.
- Implemented the circuit strictly under **Handshaking (Ready-enable) Microprotocol** and using RAM blocks from **Quartus II 17.1**'s on chip memory generation.
- Ensured program's correctness using **Intel Monitor Program** to read system's HEX memory along with a self-written **Python** program to decode encrypted messages from HEX to ASCII.

- Ensured program's stability using self-written testbenches in **SystemVerilog** and **ModemSim** to inspect waveforms.

The Art of Compression, University of British Columbia **March, 2019**
https://github.com/tunglam2101/the-art-of-compression
- Collaborated with a colleague to implement a **C++** program that manipulates images' pixel's RGB, Hue values to create stunning a mosaic-like effect.
- Devised the program using a written class called **HSLAPixel** that allows pixels manipulation and based on **QuadTree** data structures. Most of the core functions written are recursive functions.
- Ensured program's stability by using **Valgrind** to carefully examine and fix any memory leakage.

Mobile Vault, University of British Columbia **March, 2019**
https://github.com/tunglam2101/mobile-vault
- Collaborated in a 6-people group to devise a portable security vault that can be controlled via web interface in **Python**, **HTML** using Raspberry Pi 2 Model B.
- Implemented functionalities of Real-time image capture, Passcode-controlled lock system using sensors, alarm system and a camera.
- Contributed mainly as a **Frontend Developer** who designed the web's UI, interaction with hardware components using URL calls (using simple **JavaScript** and **Ajax**) and a **Hardware Tester** who verified correct functionalities of sensors using **Python** and breadboards.
- Helped the Backend team setting up the server using **Apache 2** and **Django**.
- Documented and prepared a slide for group's product presentation.

VOLUNTEER WORK EXPERIENCE

FPT IOT Department (FPT Telecom), Ho Chi Minh City, Vietnam **July, 2017 – August, 2017**
Intern
- Worked with an instructor to understand more about Embedded systems, Object-oriented C/C++ programming and various applications/prototypes the company had to offer.
- Designed 2 embedded games based on a provided framework called Active Kernel on an embedded development kit running on ARM Cortex-M3.

FPT Play (FPT Telecom), Ho Chi Minh City, Vietnam **July, 2017 – August, 2017**
Movie Translator, Content Reviewer
- Collaborated with Content Team of 7 professional colleague in the field of Communication and Media to help managing the content of FPT Play's webpage.
- Translated Vietnamese subtitles for various Asian movies and managed the Summary and Review sections of a Chinese TV series.
- Updated and verified the live schedules of various TV shows that were running on FPT Play's webpage.

AWARDS

UBC First Year Dean's Honour List 2017

Outstanding International Student Award 2016

INTERESTS & ACTIVITIES

- Algorithms & Data structures
- Embedded systems
- Mechanical keyboards
- Physics - Quantum Physics and Astrophysics
- eSports - Dota 2, Counter Strike: Global Offensive