Long Chung Chan **Harry**

FPGA Researcher · Embedded Software Developer · Android Developer · Tech Enthusiast

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Education

UNIVERSITY OF WATERLOO

Sept. 2015 - Apr. 2020 *(expected)*	**BASc,** Electrical and Computer Engineering	*Waterloo, Canada*
May. 2020 - Apr. 2021 *(expected)*	**MASc,** Electrical and Computer Engineering	*Waterloo, Canada*

Academic Research

UWaterloo Configurable Architecture Group — *University of Waterloo*

UNDERGRADUATE RESEARCH ASSISTANT — *Jan. - Aug. 2019*

- Pubished a paper called - **'Partitioning FPGA-Optimized Systolic Arrays for Fun and Profit'** and presented in the **ICFPT 2019** hosted in TianJin and received the **Best Paper Award**
- Built simulation tool in Python for modeling specific memory structure to generate cycle-accurate read/write traces allowing estimation on hardware performance before implementation

Work Experience

Smartwave Technologies — *Toronto, CA*

EMBEDDED SOFTWARE ENGINEERING — *Aug. - Dec. 2019*

- Implemented a post-quantum cryptosystem - **CRYSTALS-Kyber** on **FPGA** board using **VHDL** allowing future-proof security standard to increase product value
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Envieta System LLC — *Maryland, US*

FPGA CRYPTO DEVELOPER — *Aug. - Dec. 2018*

- Implemented a post-quantum cryptosystem - **CRYSTALS-Kyber** on **FPGA** board using **VHDL** allowing future-proof security standard to increase product value
- Verified the implementation on **DE10-Nano board** running drivers written in C to ensure run-time requirements and security standards
- Incoporated the usage of multi-port memory allowing a **4x speed up** on the system's critical path

Sensibill Inc. — *Toronto, CA*

ANDROID DEVELOPER — *Jan. - Apr. 2018*

- Integrated a smoother UI experience allowing the user to capture longer receipts by using **shape and contour detection** in **OpenCV**, resulting in better image quality and higher accuracy data extraction from the receipt
- Redesigned receipt capture function using **Kotlin** from scratch for higher readability and cleaner architecture

Ritual Technologies Inc. — *Toronto, CA*

MOBILE DEVELOPMENT ENGINEERING — *May. - Aug. 2017*

- Accomplished smooth transition to **Android Oreo** by restructuring notifications using **Notification Channels** and adding **AutoFill** onto the sign-in flow
- Added easy-switching between testing servers to visualize in-progress features in the compiled application, resulting in 30% shorter development time for new features

Skills

Programming Languages	Python, C/C++, JAVA, Kotlin, VHDL, Verilog
Web	Django with Python, React
Tools	Docker, Adobe PhotoShop, Adobe XD
Languages	English, Madarin, Cantonese