# ANDREW **JIANG**

## Summary

• 5.5 years of experience in **software and hardware engineering**

• Well-versed in device bringup, driver development, and debugging (GDB, WinDbg)

• Proficient in secured and obfuscated computer networking (SSL, Tor, Pluggable Transports)

• Completed masters level courses in security, cryptography, and quantum information

## Languages

• C/C++ • Java • Python • SQL
• VHDL • Verilog • SystemVerilog
• SpinalHDL • ARM ASM • Bash

## Education

**Candidate for Bachelor of Applied Science – Honours Computer Engineering**

*University of Waterloo (Expected Completion May 2020)*
GPA of **3.87/4.0, Dean's Honours Recipient**

**Exchange Program - Masters Computer Engineering**

*Delft University of Technology (Sep 2018 - Jan 2019)
Average of 8.83 out of 10*

## Courses

• Digital Hardware Systems
• Embedded Software
• Modern Computer Architectures
• Operating Systems
• Quantum Information
• Quantum Communication and Cryptography
• Security and Cryptography

## Experience

**Microsoft Corporation**  Aug 2019 - Present
*Silicon Verification Engineering Intern*  Sunnyvale, CA, USA

• Took ownership of verification efforts for a hardware IP block used to characterize the display projection behaviour of the **HoloLens** AR system

• Employing formal verification methodologies with **SystemVerilog & UVM** to bring test coverage of display hardware components up to 100%

**NVIDIA Corporation**  Feb 2019 - Apr 2019
*Autonomous Vehicles Engineering Intern*  Holmdel, NJ, USA

• Implemented a new Extract-Transform-Load (**ETL**) pipeline in **C++/Python** for analyzing datasets used for training and testing the PilotNet neural network-based path perception system, reducing computation time from **tens of hours to minutes**

**NVIDIA Corporation**  May 2018 - Aug 2018
*Camera Systems Software Engineering Intern*  Santa Clara, CA, USA

• Reduced the CPU load of the automotive camera stack by **~10% over 8 cores** via optimizing system calls & context switches between user mode libraries, kernel mode drivers, and embedded firmware written in **C/C++**

• Refactored the camera code base for **MISRA C** compliance and safety certification

**Advanced Micro Devices (AMD) Inc.**  Aug 2017 - Dec 2017
*Display Software Engineering Intern*  Markham, ON, Canada

• Optimized the hardware programming sequences in the **C/C++** display driver for Linux & Windows, reducing register programming time by up to **65%**

• Upstreamed and merged 27 commits into the **mainline Linux kernel**

**TunnelBear Inc.**  May 2016 - Apr 2018
*Backend/Android Developer*  Toronto, ON, Canada

• Maintained the VPN traffic obfuscation infrastructure, created a new set of more efficient REST APIs, and overhauled all aspects of the TunnelBear Android VPN app

## Projects & Research

**minRISC: Free and Open Platform Security**  May 2019 – Present
*University of Waterloo Capstone Project*

• RISC-V based SoC that that allows applications to run in trusted enclaves, ensuring memory contents are encrypted & authenticated to protect against physical attacks

**Hardware Accelerated Statistical Analysis of NLFSRs**  May 2019 – Aug 2019
*University of Waterloo Undergraduate Research Project*

• Designed a digital circuit network that accelerates the analysis of various non-linear feedback shift registers for use as secure pseudorandom number generators

**The CyanogenMod & OmniROM Projects**  Jun 2012 – May 2016
*Popular third-party aftermarket Android OS distributions*

• Maintained the **kernels, HALs, framework**, and device trees for a variety of mobile devices, providing new versions of Android long after manufacturer support ended

# ANDREW **JIANG**

## Recommendations

Andrew quickly came up to speed with our products and development process. He consistently delivered on the tasks assigned, going beyond his assigned task, investigating issues found while working on his tasks, and fixing issues that were introduced by members of the team. Andrew consistently delivered high quality software, and clearly communicated with other members of the team during the development process, taking direction and input very well, and discussing issues and feedback in detail. When faced with areas he was not familiar with, he was quick to seek the information needed to fill the gaps, leveraging other team members and finding the resources needed. Andrew did a great job giving presentations to the team about his work and establishing relationships with senior members of our team and other organizations as well. Andrew always looked for opportunities to push the boundaries of his knowledge, taking on additional tasks and thinking about future development. It's been a pleasure having Andrew on our team.

Nicolas Droux
Manager, Camera Systems Software
NVIDIA Corporation

Andrew has shown initiative and passion beyond our expectation for a student on many occasions. He treats the product as his own and takes responsibility to make it better. He is actively communicating with his fellow team members and helping the team in any way he can; many times he has also demonstrated his leadership skills within his team. He also shows he has the capability to learn complex technologies like the GPU driver and contributes just like how other full timers would. His enthusiasm and passion towards his work will continue to help him in any industry. His technical skills are also highly recognized among his peers, and his personality is easy to work with. Overall, Andrew has been one of the most talented and hard-working students we have seen.

Eagle Yeh
Supervisor - Sectional Manager
Advanced Micro Devices Inc.

Andrew (or Andrunior as we like to call him) has been by far the hardest-working, kindest, brightest, sociable, and most involved intern we've hired from the Waterloo co-op program. When he first started, we had our doubts given that it was his first internship. But he came in and absolutely took charge of the TunnelBear codebase. He worked on every part of the Android application from the native C++ component to the Java/ XML UI components. There was no task he shied away from regardless of how complex or foreign. Andrunior, almost to a fault, is unable to say no to anyone and is often found skillfully multi-tasking several large deliverables. Needless to say, his organization and prioritization is relatively unmatched for a student in his year. This was one of our first experiences hiring a junior intern. However, it was quickly evident that Andrunior's technical prowess far surpassed people with a few more years of work experience. He outperformed our expectations in every way and our decision to hire him has encouraged us to take similar risks in the future.

If you don't take him, we will. So please, do us a favour and don't give him an interview.

Raed Makhlouf
Supervisor - Senior Software Engineer
TunnelBear Inc.

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