Anthony Luo

a26luo@uwaterloo.ca github.com/antholuo linkedin.com/in/antholuo

Professional Experience

Untether AI

Asic Formal Verification Co-Op Jan 2023 – Apr 2023
<< System Verilog | UVM | Formal Verification | Verdi | Git >>
- Designed testbenches, monitors, interfaces, sequencers, and scoreboard logic in **SystemVerilog**.
- Asserted functionality of MACC and RISC-V cores using **formal verification** tools and techniques.
- Used **UVM** and functional coverage tools to assert internal and core-to-external operations.
- Wrote **C++** firmware for register-masking operation.

Asic Digital Verification and Firmware Co-Op May 2022 – Aug 2022
<< System Verilog | UVM | DVE | Flow Control | C++ | Git >>
- Brought up **SystemVerilog/UVM** testbenches on command-queue modules, verifying correct pipelining and backpressure control.
- Wrote **C++** code to generate external registers and interface with **memory-mapped IO**.

Ciena

ASIC Digital Design Co-Op Sep 2021 – Dec 2021
<< SystemVerilog | DVE | Wavedrom | Git >>
- Designed RTL Modules for external register access, incorporating **clock domain crossings**, **backpressure** and **flow control**, as well as **variable timing control** on all operations.
- Overhauled GMS protocol based receivers to use XCON, increasing bandwidth by 120%.
- Implemented **SERDES** onramp/offramp logic within local subchips.

ASIC RTL Verification Co-Op Jan 2021 – Apr 2021
<< Autocheck | Spyglass | Git | Python >>
- Designed custom **Python** modules to auto-instantiate registers and black-box designs.
- Used **Questa Autocheck** to verify line-side RTL security modules.
- Created **Python** wrappers to automate and integrate verification tools from CLI & Jenkins.

Projects

University of Waterloo Aerial Robotics Group, *Technical Director | Embedded Team Lead | Pilot*
<< C++ | Control Systems | STM32 | I2C | SPI | UART | Oscilloscopes >>
- Responsible for all air and ground systems architecture, interfacing, and documentation.
- Developed software control systems for fixed-wing and quadcopter stabilization in C++.
- Designed "System Manager" state machine for autonomous flight control.
- Contributed drivers to "LaminarOS" middleware layer, including drivers for:
  - IMU's, GPS's, Airspeed Sensors, SD cards.
- Mentored a co-op over fall 2022 who designed and deployed a HIL testbench.
- Lots of experience in driver bring-up, system integration, and hardware testing.
- Pilot in command for 2022, 2023 airframes. Groundstation operator for 2024 airframe.

Interests

Backpacking, Mountain Biking, Skiing, Climbing
(Or just spending time outside! With sun and fresh air...)

FPV Drones & RC Planes
Contributor to open-source projects like ELRS & ArduPilot! Huge fan of tuning & controls.

Photography, Audio
Used to mix FOH, love good music! Alo took (most) of the photos on WARG media!

Education

University of Waterloo, *B. Asc in Computer Engineering* 2025