

KENNY NA

kenny.na@uwaterloo.ca | [linkedin.com/in/kennyulna](https://www.linkedin.com/in/kennyulna) | github.com/kennynahh | kennyna.com

EDUCATION

University of Waterloo

Bachelor of Applied Science in Systems Design Engineering

Waterloo, ON

Sep. 2023 – Apr. 2028

EXPERIENCE

Electrical Engineering Intern

Sep. 2024 – Present

Waterloo Aerial Robotics Group

Waterloo, ON

- Designed a PCB integrating a 12V to 5V buck converter, LDO, and impedance-matched RF transceiver in Altium Designer for an ExpressLRS-compatible RC fixed-wing aircraft, supporting 2 ESCs and 6 PWM outputs.
- Simulated input filtering on buck converters with LTspice to prevent transient voltage spikes from source impedance.
- Designed a USB-C sink device to arbitrate up to 20V 5A for drone debugging, complying with USB-PD & 3.2 spec.
- Assembled and validated servo driver PCBAs using SMT reflow soldering, oscilloscopes and DMMs.

Team Co-Lead

Jan. 2024 – Present

Waterloo Reality Labs

Waterloo, ON

- Founded the world's first collegiate XR design team to develop DIY hackable VR and AR headsets.
- Leading Varifocal, a custom VR headset with real-time focal length adjustment using voice coils and eye tracking.
- Created onboarding projects for new students, with Altium for EDA and Unity (Meta XR SDK) for software.
- Outreach for 400+ interested students, and raised over \$5000 in sponsorship value for the team's first term.

IT Infrastructure & Operations Intern

Jan. 2024 – Apr. 2024

Grand & Toy

Vaughan, ON

- Managed 250+ computer users through Microsoft AD and GPO, using MMC to manage DHCP settings.
- Led deployment project for 100+ custom-imaged laptops using the Microsoft Deployment Toolkit.
- Utilized Trend Micro Apex One to remediate multiple cases of malware infection on employee PCs.
- Successfully resolved 100+ technical support tickets, contributing to a 27% increase in employee productivity.

PROJECTS

Waterloo Reality Labs: VR Headsets | Arduino, C++

- Built an open-source, DIY VR headset with compatible eye-tracking that interfaces with SteamVR.
- Made a real-time camera-based eye tracker with an ESP32, OV2640, IR LEDs, and open-source tracking software.
- Upgrading to over 63% higher horizontal FOV by using custom-cut wide fresnel lenses and new displays.

Testing Contributor: RyzenAdj | Linux, Clover Bootloader, ACPI Machine Language

- Open-source program to control the TDP of Ryzen mobile processors, superseded by UXTU on GitHub (1.2k stars).
- Dumped DSDT from laptops and edited ACPI to modify AMD STAPM power limits, sideloading with Clover.
- Benchmarked power targets for the Ryzen 5 2500U using AMD uProf, measuring up to a 67% burst performance increase and up to 36% sustained performance increase.

3D Modelling & Automation | Blender, Python

- Designed 10+ 3D scenes with Blender, using Stable Diffusion for procedural & seamless UV-mapped textures.
- Wrote Python scripts to automate importing, scaling and positioning of 30+ random models within a scene.

SKILLS

Hardware: Power Electronics, Analog/Digital Design, PCB Layout, Schematic Capture, Simulation & Validation

Applications & Tools: Altium Designer, LTSpice, SOLIDWORKS, Blender, PlatformIO, Git, Linux

Languages & Protocols: C/C++, Python, HTML, CSS, JavaScript, MATLAB, I²C, USB-PD, USB 3.2