Kenny Na

Systems Design Engineering

Waterloo, ON | 825-561-1234 | ✉ kenny.na@uwaterloo.ca | in linkedin.com/in/kennyulna | ⌕ github.com/kennynahh

EXPERIENCE

UW Reality Labs   Oct. 2023 – Present
University of Waterloo   *Waterloo, ON*

- Team lead and founder of the University of Waterloo's design team researching **VR/AR** technologies
- Led development of Reality From Scratch: a DIY VR headset with an Arduino IMU, custom housing & optics
- Leading research direction on optics (with Quadoa & Zemax software), hardware, SLAM/computer vision, software implementation in Unity (**Meta XR SDK**), VR UI/UX, and human-centric design
- Managed outreach (**300+** interested students), **80+** member applications, interviews, and raised over **$5000** in sponsorship value for the team's first official term (Quadoa Optical Systems, UWaterloo WEEF, etc.)

IT Infrastructure & Operations Intern   Jan. 2024 – Apr. 2024
Grand & Toy   *Vaughan, ON*

- Provided on-site and remote technical support for **250+** Grand & Toy employees and customers
- Led a nationwide project deploying **100+** laptops with custom Windows images using the Microsoft Deployment Toolkit, ensuring seamless integration for employees across Canada
- Managed all national G&T computer users via **Active Directory** and Group Policies
- Used the Microsoft Management Console to manage **DHCP** and users with tokenization access within **TCP/IP** network

PROJECTS

Reality From Scratch | *Arduino, C++, OpenVR SDK*

- Built an open-source, DIY VR headset with compatible eye-tracking that interfaces with SteamVR
- Forked **OpenVR drivers** with Arduino libraries for translation of 3-DoF IMU data to motion vector data
- Built a real-time camera-based eye tracker with an **ESP32, OV2640**, IR LEDs, and open-source tracking software
- Upgrading to incorporate over 160° of horizontal FOV using custom-cut wide fresnel lenses and new displays

Testing & QA: RyzenAdj | *ACPI Machine Language, Linux, Clover Bootloader*

- An open-source program designed to control the power management of Ryzen mobile processors, eventually superseded by Universal x86 Tuning Utility on GitHub (**1.2k stars**)
- Benchmarked several different power targets (e.g. 15W, 20W) and recorded performance for the Ryzen 5 2500U
- Produced tutorial videos with nearly **200k views** and provided technical support in the RyzenAdj Discord support channel, handling over **100 requests**

DeepFocus (Redux) | *Python*

- Replicating Meta Reality Labs' DeepFocus research paper, which uses neural networks to help solve the vergence-accommodation conflict in VR headsets by modifying game engine output with realistic defocus blur
- Developing Abstract Art Generator: a script to generate random images with varying properties (objects, colors, specular properties, size, positions) to create a comprehensive dataset for training a convolutional neural network

TECHNICAL SKILLS

Languages: C++, C#, Python, HTML, CSS, JavaScript, TeX, MATLAB
Developer Tools: Git, Unity, Docker, AWS, Azure, PlatformIO, Android SDK, Visual Studio Code
Other Applications: Ableton Live, FL Studio, Blender, SOLIDWORKS, Figma, Webflow, Jira

EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Applied Science in Systems Design Engineering   *Sep. 2023 – Apr. 2028*