Kenny Na

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Education

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

Experience

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

- Formed and leading 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
- Managed students' research direction: Quadoa & Zemax OpticStudio software for optics, and Unity (**Meta XR SDK**) for software implementation. Presented to students on Meta's **"Visual Turing Test"**.
- Managed outreach for **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*

- Managed **250+** Grand & Toy computer users through **Active Directory** and **Group Policy Objects**, while using **Microsoft Management Console** to manage **DHCP** settings and users with tokenization access
- Led a successful nationwide project deploying **over 100** new, custom-imaged laptops using the **Microsoft Deployment Toolkit**, which resulted in a computer performance improvement of **52%**
- Utilized **Trend Micro Apex One** to identify and remediate multiple cases of malware infection on employee PCs
- Successfully resolved **100+** technical support tickets, contributing to a **27%** increase in employee productivity

Projects

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

- Built an open-source, DIY VR headset with compatible eye-tracking that interfaces with SteamVR
- Created **OpenVR drivers** for Arduino libraries that translate 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 **63% higher** horizontal FOV using custom-cut wide fresnel lenses and new displays

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

- An open-source program designed to control the power management of Ryzen mobile processors, eventually superseded by Universal x86 Tuning Utility on GitHub **(1.2k stars)**
- Dumped **DSDT** from laptops and edited **ACPI** to modify **AMD STAPM** power limits, sideloading with **Clover**
- Benchmarked several power targets (e.g. 15W, 20W, 25W) for the Ryzen 5 2500U using **AMD uProf**, measuring a burst performance increase of up to **67%** and sustained performance of up to **36%**
- Produced tutorial videos with nearly **200k views** and provided technical support in the RyzenAdj Discord support channel, handling over **100 requests**

3D Modelling & Visual Art | *Blender, Python*

- Designed 10+ 3D art pieces with **Blender**, creating 3D models and applying composition, texturing, and lighting
- Utilized **Stable Diffusion** for custom procedural & seamless UV-mapped texture generation
- Wrote **Python scripts** to **automate** importing, scaling and positioning of **30+** random models within a scene

Technical Skills

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