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+** computer users through Microsoft **AD** and **GPO**, while 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

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- An open-source program to control the power management of Ryzen mobile processors, eventually superseded by Universal x86 Tuning Utility on GitHub **(1.2k stars)**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%**

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

STM32F103 Microcontroller PCB | *KiCAD, STM32CubeIDE*

- Designed a schematic and PCB design in **KiCAD** for the STM32F103 family, using **STM32CubeIDE** to identify and modify pinouts for several microcontrollers

Technical Skills

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