Max Sun

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Skills

Software: C#, Java, C/C++, HTML/CSS, JavaScript, Python
Skills/Tools: Git, Arduino, Node.js, STM32, UART, VS Code, Unity, Blender, Java Swing, Unity Version Control, Figma OpenGL

Education

University of Waterloo **Bachelor of Applied Science (BASc) in Computer Engineering | Sept 2024 - June 2029**

- Sir Isaac Newton Exam Certificate of Distinction (Top 2% Overall) GPA: 3.9/4.0
- Waterloo County Entrance Scholarship ($5000)
- **Courses**: Fundamentals of Programming (C++), Discrete Math & Logic 1, Digital Circuits & Systems, Electricity & Magnetism, Linear Circuits, Calculus I & II (Eng), Linear Algebra (Eng)

Experience

GooseHacks **Organizer & Tech Lead | Summer 2023 | Kitchener, ON**

- Spearheaded the development of the official event website using HTML, CSS, and JavaScript, implementing real-time updates, interactive schedules, and a user-friendly interface for **200+ participants**
- Managed social media accounts, recruited volunteers, and delivered presentations to ensure a seamless hackathon experience
- Secured sponsorships/partnerships by negotiating with companies such as Unity, Desmos and 1Password, achieving **$2k in prizes**

Projects

3D Bloons Tower Defense 6 🔗 **Java, Gradle, Blender, OpenGL**

- Recreated core mechanics of Bloons Tower Defense 6 by building a custom **3D lightweight game engine** in **Java** using **OpenGL**, allowing for enhanced customizability and external 3D modeling imports rendered in-game
- Used object-oriented programming and inheritance techniques to design AI for all balloon and monkey classes, allowing for organized and readable code

Pomodoro Timer & Task Tracker 🔗 **UART, C, STM32**

- A precise productivity timer and task tracker, controlled via buttons and displayed on a LCD, designed to keep students focused
- Utilized UART protocol for communication between two STM32 microcontrollers, one as a display and another as a controller

BoxHead 🔗 **Javascript, HTML/CSS**

- Designed a handcrafted **augmented reality (AR)** cardboard headset that integrates with a phone camera to display real-time locations of objects or people on a phone visible through the AR headset
- Employed **ml5.js** library for real-time object detection using machine learning models and p5.js to display graphics on the headset
- Utilized JavaScript speech recognition and speech synthesis allowing users to specify objects to find and receive auditory feedback

VR Omni Directional Movement (ODM) Gear 🔗 **Arduino, Google Cardboard VR, Unity, C#, C++**

- VR physics game replicating grapple and flying mechanics with Google's Cardboard VR Headset made for **Hack the North**
- Made a glove controller using an **Arduino Nano**, allowing for a make-shift, low-budget VR controller to the Cardboard Headset
- Implemented **Unity Version Control** for reliable and fast collaboration between four students through branching and merging

Attack On Titan ODM Gear Simulator 🔗 **Unity, C#**

- Developed a physics simulator replicating ODM gear mechanics from Attack on Titan, uploaded to Itch.io using WebGL's JavaScript API to render 3D graphics on a browser amassing **3,000+ players**
- Applied object-oriented programming to bring lifelike swinging, rope mechanics, and immersive effects in a 3D environment

Float Topia 🔗 **Unity, C#, Blender**

- A peaceful ocean simulation with realistic buoyancy and wave physics, enabling customizable boats and unique ocean interactions
- Blended physics and artistry to create an educational experience, winning "**Best Hack for Education**" (1st of 54) at **HackJPS**

Garbage Hero 🔗 **Unity, C#, Blender**

- Developed a Unity-based game with custom planet and grapple physics, winning **3rd overall** and "**Best Theme**" at **SpringHacks**
- Designed captivating gameplay to promote environmental awareness blending education into a remarkable sci-fi environment