

DAEKUN KIM

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Skills

LANGUAGES

C#, C++, SQL, Python, HLSL, JavaScript, PHP, Java, HTML, CSS

FRAMEWORKS

Node.js, Express.js, Bootstrap, REST, OpenGL

TOOLS

Unity, Mixed Reality Toolkit, MySQL, AWS, TensorFlow

Work Experience

AR/VR SOFTWARE ENGINEERING INTERN

Spatial, Apr 2020 - Aug 2020

- Integrated **articulated hand tracking** to Spatial's input system by bridging Oculus's input system with Microsoft's Mixed Reality Toolkit using **Unity** and **C#** to improve the UX for over **10,000 Oculus Quest users**.
- Designed and developed new teleportation mechanics for hand tracking by working closely with the designers during **design iteration** and **rapid prototyping** processes to provide intuitive experience for the users.
- Implemented interactable web browser in AR/VR to allow live web browsing in collaborative sessions.

JUNIOR DEVELOPER

Virtro Entertainment, Jul 2018 - Aug 2018

- Built a streamlined, scalable backend for Slack-integrated chatbot using **Node.js**, **Express**, **MySQL**, and **REST** API design to automate the manual payroll system and to keep track of team's punch-in's and punch-out's.
- Optimized a VR port of *The Station™* (Sci-Fi FPS Indie Game) for PlayStation VR, Oculus Rift and HTC Vive platforms using **Unity's** light baking process, producing **130%+ increase** in performance (30 FPS → 70+ FPS)

SOFTWARE DEVELOPER, QUALITY ASSURANCE

HeadCheck Health, Aug 2017

- Automated the registration of **2,000+ athletes** using **Java** and **Selenium** achieve a registration speedup from **~5 days to 10 minutes** for a prospective concussion-diagnostics software startup.

Projects

KINDLER'S NETWORK daekunkim.com/?project=0

Kindler's Society, Jul 2016 - Jun 2017

- Created a web application using **PHP**, **Bootstrap** and **MySQL** for members of Kindler's Society (**over 500**) to sign up and check the volunteer hours, and for executive members to manage the volunteer events.

HOLOKINECT daekunkim.com/?project=15

Personal Project, Aug 2020 - Now

- Created an AR point-cloud streaming application for HoloLens 2 and Azure Kinect using **Unity**, **C#**, and **WebRTC**, producing a real-time streaming of **11 million points per second** to provide a ubiquitous 3D teleportation-like experience to the users.
- Optimized the conversion of RGB-Depth image to point-cloud using **High-Level Shading Language (HLSL)** **Shader**, achieving a **7x increase** in performance (~5 FPS to a steady 33 FPS).

WIZARD CHESS daekunkim.com/?project=10

Hack the North, Sep 2018 - Dec 2018

- Awarded **Winner/Finalist** out of over 250 teams in **Hack the North 2018** by recreating "Wizard Chess" from the *Harry Potter* series in VR using **Unity**, **C#**, and IBM Watson's **natural language processing (NLP) technology**.

REACTOR ENGINE daekunkim.com/?project=2

Personal Project, Sep 2016 - Mar 2017

- Developed an **OpenGL**-based game engine for Mac OS X with a scripting framework built with **C++** to achieve a **9x increase** in performance (7 FPS → 60+ FPS) for rendering of 3D objects.

Education

HONOURS SOFTWARE ENGINEERING, CO-OP

University of Waterloo, 2019-2024 (Expected)

- Cumulative Average: 93.4% (4.0 GPA)