DAEKUN KIM

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Skills

LANGUAGES	C#, C, C++, SQL, Python, HLSL, PHP, Java, HTML/CSS/ JavaScript, Bash
FRAMEWORKS	Node.js, Express.js, Bootstrap, REST, OpenGL
TOOLS	Unity, Mixed Reality Toolkit, MySQL, AWS, TensorFlow, Selenium

Work Experience

AR/VR SOFTWARE ENGINEERING INTERN — Spatial, Apr 2020 - Aug 2020

- Transitioned Spatial's interaction medium to an **articulated hand tracking** to unlock the full potential of spatial manipulation in collaborative sessions for over **10,000 Oculus Quest users**, by bridging Oculus's input system with Microsoft's **Mixed Reality Toolkit** using **Unity** and **C#**.
- Developed a hand interaction-based teleport and turning mechanism based on the **instinctual interaction** design philosophy, by **working closely with the founder** in the **rapid prototyping** iteration process.
- Delivered an AR/VR-ready in-app web browser to allow live web browsing in collaborative sessions.

JUNIOR DEVELOPER — Virtro Entertainment, Jul 2018 - Aug 2018

- 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 over **200%+ increase** in performance (FPS count)
- 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.

SOFTWARE DEVELOPER, QUALITY ASSURANCE — HeadCheck Health, Aug 2017

- Led the development of the athlete registration automation software using **Java** and **Selenium** which **reduced the redundancy by over 99%** for a prospective concussion-diagnostics software startup.

Projects

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**.
- Optimized the conversion of RGB-D image to point-cloud using **HLSL Shader**, achieving a **7x increase** in performance (~5 FPS to a steady 33 FPS).

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.

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 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 **900% increase** in performance (measured by 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)