

Dilraj Devgun

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github: github.com/Dilraj-Singh-Devgun | portfolio: thejarlid.github.io

EXPERIENCE

Software Engineer (HoloLens Firmware and Drivers Systems Team)

Microsoft | Redmond, WA | Aug 2019 - Present

- Developed firmware for the SoC and HPU which is a custom ASIC for the HoloLens, government IVAS project, and future VR/AR devices
- Helped integrate sensors, write drivers, and provide higher level APIs for consumers such as the Calibration, Tracking, and Vision teams
- Tripled frame rate for IVAS cameras by implementing a shared memory buffer pool library that was reusable across multiple sensors
- Inherited ownership and continued to develop a set of internal C++ tools used throughout the HoloLens stack to record sensor data into a custom binary file format alongside features to analyze, repair, and replay the data

Software Engineering Intern

Microsoft | Redmond, WA | Jun 2018 - Aug 2018

- Developed an Azure hosted web application to model service architectures using .NET Core, Angular, and C# while interning on the Universal Store Team

Operating System and Hypervisor Researcher + Undergraduate TA

University of Washington CSE | Seattle, WA | Jan 2018 - Jun 2019

- Worked alongside Professor Tom Anderson to extend a Unix Operating System into a hypervisor that supports multiple paravirtualized guest OSes
- Designed and implemented a user-level thread system and privileged system calls to securely allow for one user level process to manage another user level's pages
- Taught Section and assisted students in office hours as TA for UW Operating Systems course (CSE 451) and Introductory Programming course (CSE 143)

iOS Engineer

Freelance & Independent | Seattle, WA | Jun 2014 - Present

- Designed and developed a mobile app in High School which Apple featured on the App Store as Best New App in Germany, Sweden and Austria
- Built a 3D model presentation tool using ARKit for designers at Vossler Media to provide engaging demonstrations of their work to their clients
- Decreased stroke patient screen time by >90% using an on-device decision tree on patient information to determine research trial eligibility
- Currently working on a cross platform application to provide a new productivity experience focused on mental and emotional clarity

EDUCATION

University of Washington

Seattle | Aug 2015 - Jun 2019

Bachelor of Arts and Science

Computer Science

GPA: 3.75

AWARDS

Best New App by Apple (Germany, Sweden, Austria)

WA State Honors

AP Scholar Award with Distinction

Annual Dean's List ('15 - '16, '17 - '18, '18 - '19)

PROJECTS

Citrus Motivational Task Manager (iOS)

L1 Optimal Path Video Stabilizer (Python)

Image Processing Library (C/C++)

Panorama Stitching (C/C++)

Meraki (Current project, iOS and Web)

Paxos Key/Value Store (Java)

PROGRAMMING SKILLS

iOS Development

Swift

Objective-C

Java

C/C++

C#

Python

Embedded Systems

Firmware and Driver Development

Operating Systems

SQL (Azure, AWS)

Systems Development

Web Development

ML/AI/CV Fundamentals