Aras Yazgan

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WORK EXPERIENCE

Microsoft Authentication Library *C++ Developer* **August 2021–April 2023**

- Worked MacOS, iOS, Windows, and Android platforms for Microsoft's authentication stack (both OneAuth and MSAL) to find and fix bugs, implement new features, and advance features that are already in progress while prioritizing cross platform code over platform specific code where possible
- Worked closely with our team to coordinate the design and implementation of new features and planning out how to distribute work in the most productive fashion
- Developed robust code on a large code base that is relied on by many of the largest companies on the planet to provide them with a safe and secure authentication library, and provided live support to these companies fix emergency issues they had that impacted their customers during weeks where I was the on-call engineer
- Added to the telemetry infrastructure of the MSAL codebase that is used to inform the developer team of bugs with great and useful detail that allowed developers to efficiently identify problems with our code with data driven understanding

Fields and Waves VR-Lab *Unity/Oculus Developer* **June 2019–May 2021**

- Created and developed scenes as part of a larger project to be used by students as part of University of Illinois' Fields and Waves course, as supplementary lab exercises
- Visualized cylindrical, spherical, and cartesian coordinate systems, and their corresponding volume and surface derivatives, as well as more abstract concepts like the reflection and transmission transverse electromagnetic waves, and polarization of electromagnetic waves using Oculus' VR API

PROJECTS

Unix-Based Operating System with QEMU **August 2019-December 2019**

- Using QEMU, along with a team of 4, I built a Unix-based operating system. I wrote the system's interrupt handler, its file-system, paging system, and its scheduling and context switches, which allowed up to 6 programs to be running simultaneously, and in, using a FIFO scheduling
- Wrote and implemented various complex system parts as described above into one coherent operating system

VR Spaceship Dogfight Simulator **September 2019-December 2019**

- Developed the software for a virtual reality game that places the player in a spaceship, including complex, intertwined systems that managed and implemented enemy AI, audio effects, animations, visual effects, spaceship mechanics, UI and smart targeting systems, and user input that could be used to physically interact with ship controls in the cockpit using Unity and Oculus' VR API.
- Designed the game, and implemented sound effects, music, visual effects, and animations

Asteroids on Field Programmable Gate Array **April 2019**

- Programmed a version of the classic 1979 Asteroids arcade game onto a DE2-115 FPGA using SystemVerilog for all aspects of the project except to get keystrokes from an external USB keyboard attached directly to the FPGA.
- Implemented a USB interface using NIOS II's interface on Eclipse, using C to access values on the DE2-115 board to send keycodes, up to six separate bytes at a time, through the EZ-OTG chip on the board.
- Implemented game logic, scoring, waves, breakable asteroids, sprites, audio output signals, and a UFO AI using SystemVerilog in order to synthesize hardware onto the DE2-115 board.

Mechmania 2019 and 2020 *Programmer and Artist* **September 2018–September 2020**

- Worked along with more than 30 student developers and engineers to build a simple video game from ground-up, and adapt it to be playable by AI scripts written by hundreds of competitors during the annual Mechmania hackathon
- Worked as a member of the visualizer team to parse through JSON files containing the game data from the AI matches, and visualize the game data using Unity
- Worked on communicating with the game servers in order to retrieve game-state data, and display it to competitors with minimum delay in an aesthetically elegant, and easy to understand manner

EDUCATION

University of Illinois at Urbana-Champaign **Graduation Date: May 2021**

Bachelor of Science in Computer Engineering

SKILLS

- *Programming Languages:* C++, C#, Python, Java, C, Assembly x86, SystemVerilog, VHDL
- Proficient in Unity development, as well as Unity's Oculus framework
- Experienced in using CUDA
- Skilled illustrator and animator (portfolio: https://www.artstation.com/sketching101)
- Fluent in French, Turkish, and English