Brian M. Charles

1brian.charles@gmail.com • (949) 910-3416

www.brianmcharles.com

An experienced game engineer eager to use my skillset and wide-ranging knowledge base to pursue my long-held interest in realtime graphics and game engine technology.

Skills:

- -C++, C, C#, Objective-C, Python, Lua, PHP, Javascript, HLSL, GLSL, Cg
- -Visual Studio, JetBrains Rider, Xcode
- -Git, Subversion, Mercurial
- -Unity, Source, Direct3D 11, OpenGL 3+
- -Extensive first-hand experience creating and integrating 2D and 3D art assets
- -Linux/MacOS command line interface

Experience:

MobilityWare – Software Engineer II   June 2014 – Present

- -Supported a suite of 5 iOS games using Objective-C and UIKit, including multiple UI refactors and a major feature update to a game in which I developed nearly all of the UI code
- -Helped port the suite to Unity (using C#) to enable cross-platform development, with a focus on closely duplicating existing functionality to provide change-averse users with as seamless of a migration as possible
- -As one of the team's iOS experts, wrote multiple native Objective-C plugins to make up for gaps in the engine's platform support and helped coworkers with iOS questions and investigations
- -Contributed fixes, improvements, and new features to shared codebases used across a suite of 16 games, shipping on both Android and iOS, with millions of daily users
- -Worked on multiple new games, with a focus on game data models, graphical effects, editor tooling, and audio
- -As part of a company game jam, worked in a 2-person team to explore Unity's ECS, including writing a render system to efficiently draw sorted, blended sprites (not natively supported by the prerelease ECS at the time)
- -Independently conceived of and created an audio mirroring tool to allow our audio producers to hear their computer audio (Windows, C#) through a mobile device's sound system (iOS, Objective-C) with inaudible latency, earning me a "core values all-star" award in recognition of this work

Selected Projects:

BOTB WebBuzzer (Multiplatform/Web)   May 2020

- -Developed a web-based buzzer using C++ (server) and Javascript (client) for use in a quiz-show setting
- -Created custom network protocol to efficiently communicate between client and server using WebSockets
- -Features include full latency compensation and clean handling of interrupted connections

3D Visualizer (PC, Mac)   November 2014 – June 2015

- -Used C++ and OpenGL 3.2 to in support of a medical research project to visualize 2D data onto a 3d-scanned model of the capture surface
- -Wrote cross-platform utility code to handle OS dialog and file management interfaces with a common API
- -Wrote code to load MATLAB figure data for processing and rendering on the GPU
- -Developed a system that leveraged the shader compiler to help analyze loaded datasets

Marker (PC)   October 2013

- -Worked alone to quickly create a 4kB graphics demo using C++ and HLSL with DirectX 11
- -Wrote new framework to load and run my shader code in the smallest space possible
- -Implemented a distance field raymarcher in HLSL to render a scene in realtime

Wings of Rage (PC)   February 2013 - June 2013

- -Served as lead programmer on 5 member student team creating a 2D "bullet hell" shooter
- -Designed and directed development of custom game engine in C++ on top of SFML

Education:

University of California, Irvine

- -Bachelor of Science in Computer Science, Cum Laude
- -Campuswide Honors Program