Mark Strachan

Unity 3D Programmer

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I am seeking a professional position as a Unity/C# programmer, with a great team of engineers who understand the art and magic of software development in 3D spaces. I love coding for VR and AR. I can blend my background in mathematics, design, and software development into one integrated and powerful form of self-expression, which I can use to help others. I have worked on my Unity skillset to the point where I can do things FAST. At this stage in my career I want to seek out and be around those who make an art out of pushing game engines as far as they can. In other engagements, I've been a software architect, lead developer and manager for big data and enterprise technologies—and I want to leverage those skills in 3D (which is also more fun.) I have solid design and engineering experience, and I want to bring that to bear in world where I get to code in color and movement.

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|  | **Skills** |

Unity 2019.2 and prior versions, C#, C++, Java, UML, Magic Leap, VIVE, Oculus Rift, ARVR

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|  | **Work History** |

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| 2019  Short Term Contract | **Intel Sports – 2020 Tokyo Olympics**  Sun Technologies, San Jose, CA   * Brought application to feature complete status 1 week ahead of schedule * Provided feature development, bug fixing, and QA support for 2020 Tokyo Summer Olympics VR application using Intel TrueVR and Intel application framework. * Implemented User Preferences, First Time User Experience, and User Telemetry Features. Advised regarding user experience, performance optimization, framework compliance, lighting technique, post processing, and profiling. Corrected Controller event mappings for Oculus Quest as project adopted 2 hand controller application style for first time. * Provided feedback and guidance to product managers and specification refinement where necessary. Maintained mainline product quality to support QA team. * Worked with remote team to enhance features and converge quality towards production level. Analyzed source code and provided feedback on general implementation quality and techniques to move configuration from main scenes towards source-controlled prefabs.   ‘ |
| 2015-11 - Current | **CEO/Lead Architect/Software Engineer**  Create.media, Los Angeles, CA   * Implemented music composition system from scratch in Augmented Reality with Magic Leap and VIVE, with Unity coding being my daily duty for the last three years. We were among the first people to acquire and work with a Magic Leap. * Worked with profiler, prefabs, custom meshes, custom shaders and materials, static batching, large numbers of meshes, large numbers of colliders. Also worked with Magic Leap system components, including hand detection, eye detection, gesture recognition, controller API, AR world mesh generation, and real-world object placement. Utilized many of the Magic Leap examples and incorporated them into sample code. Configured Magic Leap system and updated device, which in earlier days required flashing the operating system directly, in a similar manner to Android O/S. * Upgraded my Unity programming skill set from exploratory, to fast, and professional-grade. * Communicated with Matt Shoen on the Unity EditorXR team, submitting my code to the unity architecture group responsible for EditorXR; Analyzed the EditorXR code base using Sparx Enterprise Architect and SciTools Understand. Also decoupled the EditorXR user interface framework from the Unity Editor, so that it became a standalone UI system. This included retrofitting a new undo/redo architecture and building an input system that worked with both SteamVR and Oculus Drivers. The EditorXR framework provides a container mechanism allowing the use of many different user interface paradigms integrated into one application in a well-organized and efficient fashion. * Completed "VR Masters" Unity engineering program. Mentored other students on software design, architecture and engineering principles. Worked with Git and small teams on a number of student projects; music experiences, mars rover, etc. * Worked closely with VIVE, Leap Motion, Oculus Rift, and GearVR. Explored mobile device development with Samsung GearVRf and Java. Also explored configuration of Android devices using CyanogenMod, flashing custom operating system and performing deep changes in phone configurations, backup and recovery, etc. * Participated in and help produce VR events including EDCVR, and fostered community development. * Studied color spaces in great detail, especially CIECAM02 and CIELUV, designed and developed color picker in desktop Java. Studied lighting systems as coached by longtime friend and design lead from Developer CCP Games. Utilized lighting knowledge to optimize implementation of musical harmony space in JavaFX lightweight 3D implementation. Also explored Java VR architectures but dismissed them due to lack of community support. * Published 4 patents with a 5th pending, related to Music Theory Geometry, designed using differential geometry (i.e. advanced linear algebra), abstract algebra, and topology. Used mathematical analysis and engineering to design a 6-dimensional interpretation of music theory structures, with 2 and 3D user interfaces derived from these structures. My design ethic is based on minimalism and simplicity driving function, with environmental design annotating the information the user needs to make decisions in virtual and augmented reality spaces. |

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| 1999-11 - Current | **CEO**  CodeSource Software, Los Angeles, CA   * Principle Investigator for the National Science Foundation in 2014, awarded two grants for MusicShaper. Designed a series of 2D touch and 3D user interfaces for music composition, which integrated together become full software suite for writing music. * Designed architecture and oversaw offshore team implementation of a full Application Life-cycle Management system, targeting CMM (capability maturity model) level V (A sub-component of TOGAF.) * Oversaw offshore team engagement with Amgen Corporation--a Fortune 500 pharmaceutical company, for 14 years, responsible for a suite of 10 Java and applications. * Traveling consulting for Serena Software, helping customers establish software development operations using Serena (Now MicroFocus) ChangeMan and Dimensions products, with many projects including a corrective action process implementation for a Nuclear power plant. * Setup IO Glasses based VR system to explore virtual spaces before game engine era. * Consulting position as lead architect for Information Week's #1 IT Innovator (Marshall/Avnet--World’s largest electronics parts distributor) at peak of dot com boom--Microsoft was 3rd that year. Developed electronic parts distribution system for world's largest electronic parts distributor. |

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|  | **Software Engineer**  Rockwell International, Thousand Oaks, CA   * Worked with earliest desktop VR systems ever available--drawing simple scenes including boxes on tables with OpenGL. * Created proprietary image processing technique over the course of six months that used boundary conditions to stabilize sub-pixel resolution enhancement, relying on novel application of linear programming, implemented in C++. * Feature enhancement, thin film deposition chamber control system for custom optics, in C++. |

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|  | **Education** |

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| 1991-09 - 2011-06 | Bachelor of Science: Mathematics and Computer Science  Harvey Mudd College - Claremont, CA  Top undergraduate engineering school in the country, according to US News and World report. Attended in two sessions separated by a large period. Completed courses on 3D graphics with OpenGL in a Sun Unix environment. |

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|  | **Yoga** |

I take pride in attending yoga 4-5x a week so I can sustain a high degree of physical fitness.

Sharp body = Sharp mind.