Jonah Dubé

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Professional Experience

Software Engineer, Pipeline - Monolith Productions Jan. 2016 - Present
Internship *- Jan. 2015 - Sept. 2015*

Wonder Woman

- Automated a facial animation pipeline utililizing Speech Graphics.
- Updated the FX editor with an MFC graph control to support parameterizing FX files based on data at runtime rather than statically.
- Implemented several build machine pipelines to produce facial animations, level of detail (LOD) assets and texture content on a nightly or weekly basis.
- Implemented various 3D geometry manipulation tools for Monolith's world editor including - but not limited to - merging vertices, quadrangulating faces and splitting edges.
- Worked with runtime engineers to support looping FX files with start and end sequences.
- Provided continued support for teams using 3rd party software and SDK's including Autodesk Maya plugins, FBX and Simplygon.
- Investigated and fixed crash bugs in various tools using the Visual Studio debugger, crash dumps, remote debugging as well as other techniques.
- Participated in or authored over 1000 code reviews with fellow software engineers, 500 of which were performed via Swarm.

Middle-earth: Shadow of War

- Automated a facial animation pipeline to build and test over 25,000 voice lines using Faceware Tech, Annosoft, Autodesk Maya and Python facilitated through Visual Build Pro.
- Added the ability for FX files to be referenced from other FX files creating a new form of data encapsulation and re-use, while supporting per-instance overrides.
- Collaborated with various teams to implement features for Monolith's proprietary toolset such as the game database, world and FX editors utilizing Microsoft MFC and Codejock.
- Supported the UI team with bug fixes and feature requests for the PC port of Middle-earth: Shadow of War.
- Collaborated with engineers to debug and fix legacy code in existing large scale tools.
- Attended and spoke at various Warner Bros. video game industry events and conferences representing the facial animation work at Monolith.
- Extensive experience with software engineering production tools such as Perforce, JIRA and (for documenting features) Confluence.

Academic Projects

Physics, Graphics, Tools, Engine - Orbit Jan. 2015 - Dec. 2015
3D rigid body constraint-based physics engine and interative fluid simulation.

- Built a component-based 3D game engine with OpenGL v4.3 and a constraint-based physics engine as a framework for multiple physics courses and to test interactive fluids.
- Implemented basic fluid dynamics using Smoothed Particle Hydrodynamics with OpenCL.
- Implemented a heat and surface simulation using the forward differencing method and Discrete Fourier Transform as a proof of concept for varied game mechanics.
- Created a custom editor using a tools API called Dear ImGui to decrease iteration time.

Education

Bachelor of Science in Computer Science in Real-Time Interactive Simulation
Minor: Physics, Math
DigiPen Institute of Technology August 2016

Skills

Programming Languages
C/C++
Python (familiar)

Software/API's
Visual Studio
C++ STL
Microsoft MFC
Codejock
Perforce
JIRA
Confluence
Visual Studio Code
Visual Build Pro
Faceware Tech
Speech Graphics
Autodesk Maya SDK
FBX SDK
Simplygon
Swarm
Dear ImGui
Git
Sourcetree

Technical Skills
Component Based Arch.
Inheritance Based Arch.
Object Oriented Design
Linear Algebra
Calculus
3D Math (familiar)