

Benjamin Quach

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Technical Skills

Languages: C++, C, Javascript, GLSL, HLSL

Development Areas: Web, Game Development, 3D Graphics, GPU and Rendering Pipelines

Libraries And APIs: Qt, FreeRDP, GWT, OpenGL, DirectX11, WebGL, POSIX, Win32, Unity

Experience

Graphics Software Engineer, SAMSUNG ELECTRONICS

February 2018 - Present

- Developing Vulkan APIs and user mode driver optimizations for rendering in mobile GPUs in C++.
- Improved GPU occupancy by improving performance for primitive rendering in tile based renderers.
- Helped implement Vulkan and OpenGL APIs and debug graphics applications written in Vulkan.

Software Engineer, AUTODESK

July 2016 - February 2018

- Software engineer on the graphics team for the AutoCAD engine in C++ with a codebase of over 15 million lines.
- Helped port and architect parts of the graphics stack and developed new code with DirectX11.
- Created graphics calls and networking architecture for a server side rendering prototype.
- Helped develop AutoCAD web performance benchmarking tools in Javascript.

Software Engineering Intern, AUTODESK

June 2015 - August 2015

- Intern on the AutoCAD 360 team, improved performance and maintainability by restructuring the Java/GWT based CAD engine through changing event systems and fattening class hierarchies.

Game Developer, UNIVERSITY OF CALIFORNIA, RIVERSIDE BRAIN GAME CENTER

September 2014 - June 2015

- Worked on the development of gameplay and level generation in Unity for an audio training game under Dr. Victor Zordan.
- Uses research from the UCR neuroscience department to improve brain and auditory functionality.

Software Engineering Intern, DRASTER

June 2014 - September 2014

- Created parts of an asset management program for 3D digital artists, working on the network and interface aspects of the program.
- Developed network message queues and passing mesh data through freeRDP virtual channels in C++ while drawing 3D geometry.

Extracurricular Activity

President, ASSOCIATION OF COMPUTING MACHINERY AT UCR

September 2015 - June 2016

- I organized and ran events, such as a career paths program and HackNights to ensure that students at UCR are getting the engineering opportunities they need. Also treasurer of the organization last year.

Vice President, GAME SPAWN AT UCR

September 2014 - June 2015

- I formed events and mentorship workshops for the UCR game development club. I also led multiple projects for students to work on games, and teach workshops about game design.

Technical Projects

BEND3R

💻 <https://github.com/benquach16/BEND3R>

- Project leader and lead programmer for the 1st place hackUCI winner. A 3D modeling program that uses the Microsoft Kinect to simulate clay sculpting with hand gestures.
- Developed most of the graphics components and shaders of the program.

Planetary Renderer

💻 <https://github.com/benquach16/bgfx-PlanetShader>

- Developed a planetary rendering program in C++ using a low level rendering library called bgfx
- Used multiple GLSL shaders to achieve desired effect and hand wrote basic scene management and a rendering pipeline.

Education

University of California, Riverside, B.S. IN COMPUTER SCIENCE

2012 - 2016