

Chris Ho

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Objective

Position as an engineer at a gaming company working on graphics, the engine, or gameplay

Education

- **University of California, Davis** Davis, CA
Bachelor of the Arts and Sciences in Computer Science and Philosophy Sep. 2004 – Dec. 2009
Upper Division GPA: 3.28 Computer Science, 3.1 Philosophy
 - Key Courses: Graduate Computer Graphics, Graduate Graphics Architecture, Graduate Visualization, Software Engineering, Computer Architecture

Experience

- **Visualization and Interface Design Innovation** Davis, CA
Undergraduate Research Assistant June 2008 - Dec. 2009
Junior Specialist Jan. 2010 - Present
 - Developed several cross-platform systems for visualizing volume datasets using Qt, OpenGL and CUDA
 - Leveraged volume ray-casting using regular grids, curvilinear grids, tetrahedral meshes to produce compelling visualizations
 - Visualizations done for the Princeton Plasma Physics Laboratory were featured in Discovery magazine, and the video won a SciDAC OASCR
 - Implemented several advanced rasterization techniques to enhance our visualizations, such as screen-space ambient occlusion/ambient occlusion volumes and soft shadows
 - Contributed significantly to our in-lab framework for rapidly prototyping and creating visualization systems

Research Publications

Marchesin, Stephane, Cheng-Kai Chen, **Chris Ho**, and Kwan-Liu Ma. "View-Dependent Streamlines for 3D Vector Fields." *IEEE Transactions on Visualization and Computer Graphics* 16 (2010).

Chen, Cheng-Kai, **Chris Ho**, Carlos Correa, Kwan-Liu Ma, and Ahmed Elgamal. "Visualizing Three-Dimensional Earthquake Simulation Data." To Appear: *IEEE Computing in Science & Engineering*.

Projects

Regular Grid Volume Renderer

- A volume raycaster that can be used by anyone who wants to view a regular dataset
- Includes all the necessities for exploring a dataset: cutting planes, transfer functions, lighting options
- Extra options for flow-field visualization, such as streamline dropping and rendering

Tetrahedral Mesh Volume Renderer

- Similar to the regular grid volume renderer, but for unstructured tetrahedral meshes
- Tetrahedral mesh rendering poses far more problems than regular grid rendering, and as such requires a separate rendering algorithm
- As tetrahedral rendering is slow by nature, considerations need to be made to keep an interactive "feel"

Game Engine

- A PC game engine built with DirectX
- At very early stages

Skills

Languages: C/C++, C#, Java, Lua, PHP

Operating Systems: Windows, Linux and OS X

Software and Technologies: Qt 4.7, OpenGL 2.1, 3.3 and 4.1, CUDA 3.2, Visual Studio, Xcode, Photoshop, Maya

Other: Finding and implementing whitepapers