Mark Kim
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Education

PhD. in Computing — Advisor: Charles Hansen
University of Utah — *Nov. 2015*

M.S. in Computer Science
University of Denver, Denver CO. — *2003-2005*

B.S. in Computer Science and Philosophy
University of Wisconsin, Madison, Madison WI. — *1998-2002*

Professional Experience

Research Software Engineer — Qualcomm
San Diego, Ca. — *Jul. 2020 - Present*

- Work in the Graphics Research Team, focused on ray tracing.
- Refine BVH traversal algorithms applied to mobile GPUs.
- Represent Qualcomm on the Khronos ANARI working group.

Computer Scientist — Oak Ridge National Laboratory
Oak Ridge, TN. — *Apr. 2018 - Jul. 2020*

Area of Research: Portable parallel performance (GPGPU) for HPC accelerators. In situ scientific visualization for HPC. In situ machine learning for scientific visualization.

Postdoctoral Researcher — Oak Ridge National Laboratory
Oak Ridge, TN. — *Sep. 2016 - Apr. 2018*

Area of Research: Portable parallel performance (GPGPU) for HPC accelerators. In situ scientific visualization for HPC.

Postdoctoral Researcher — Scientific Computing and Imaging Institute
Salt Lake City, UT — *Nov. 2015 - Sep. 2016*

Area of Research: Lossy compression on the GPU for HPC. Portable parallel performance for accelerators in HPC (GPGPU).

Graduate Intern — Lawrence Livermore National Laboratory
Livermore, CA — *May 2015 - Aug 2015*

Area of Research: Lossy compression on the GPU for HPC.

Research Assistant — Scientific Computing and Imaging Institute, University of Utah
Salt Lake City, UT — *Aug. 2008 - Nov. 2015*

Area of Research: Scientific Visualization, Flow Visualization, and GPGPU.

Graduate Intern — Los Alamos National Lab
Los Alamos, NM — *May 2008 - Aug. 2008, May 2009 - Aug. 2009*

Projects: P3M Simulation in CUDA, Lyman-Alpha Volume Visualization, and visual analysis of genomic frequency data with Kohonen maps in CUDA.

Skills

Expertise
Parallel Computing Algorithms, GPGPU Performance Tuning, Ray tracing, Compression for HPC

Languages
C/C++, CUDA, Python/SciPy, OpenGL, Vulkan

Programming Environments
CMake, Git, Jupyter Notebook, Qt, Unix/Linux, Visual Studio

Libraries
OpenMP, TBB, Thrust, VTK, VTK-m