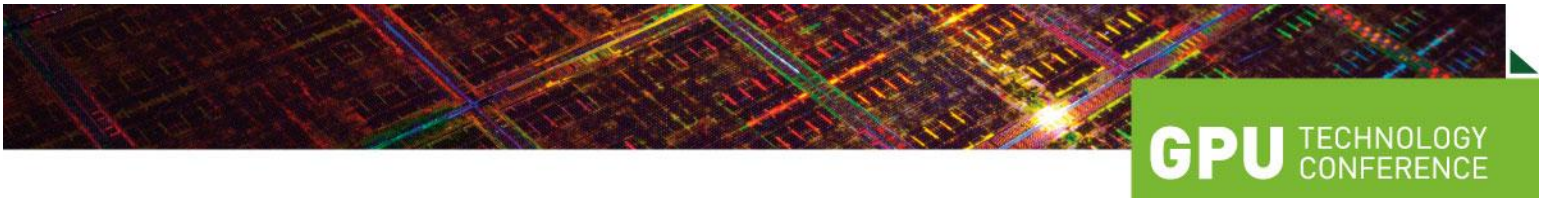

GPU Technology Conference, May 14-17, 2012
McEnery Convention Center, San Jose, California
www.gputechconf.com

Sessions on Neuroscience (subject to change)

IMPORTANT: Visit http://www.gputechconf.com/page/sessions.html for the most up-to-date schedule.

S0017 - 4D Medical Image Processing with CUDA
Anders Eklund (Linköping University)
Day: Wednesday, 05/16 | **Time:** 9:00 am - 9:50 am
Topic Areas: Medical Imaging & Visualization; Audio, Image and Video Processing; Neuroscience; Visualization
Session Level: Advanced

Learn how to do 4D image processing with CUDA, especially for medical imaging applications. In this session we will give a couple of examples of how 4D image processing can take advantage of the computational power of the GPU. We will present how to use the GPU for functional magnetic resonance imaging (fMRI) analysis and true 4D image denoising. Most of our examples use the GPU both to speed-up the analysis and to visualize the results.

S0202 - Terascale Volume Visualization in Neuroscience
Johanna Beyer (King Abdullah University of Science and Technology), Markus Hadwiger (KAUST)
Day: Wednesday, 05/16 | **Time:** 4:30 pm - 4:55 pm
Topic Areas: Visualization; Neuroscience
Session Level: Intermediate

Learn how to create a scalable volume visualization system for interactive rendering of terascale EM data. We will describe the major design principles, how we can avoid the standard approach of pre-computing a 3D multi-resolution hierarchy such as an octree, and how to handle continuous streaming of newly acquired data. For rendering we build upon a visibility-driven approach and 3D virtual texturing, and perform interactive volume rendering of a “virtual” volume, where the corresponding physical storage is only represented and populated in a sparse manner with 2D instead of 3D image data on the fly during rendering.