Contributed Poster Presentations & Demos (I)
9:25am – 10:55am on Saturday, August 7, 2004

Accelerated 2-D and 3-D Digital Image Processing on a GPU
Bryson R. Payne (Georgia College & State University),
G. Scott Owen, Saeid O. Belkasim, and Patrick Flynn (Georgia State University)

Accelerating Morphable 3D Model Fitting with Graphics Hardware
Kazuhiro Hiwada (Toshiba Corporation)

Brook for GPUs: Stream Computing on Graphics Hardware
Ian Buck, Tim Foley, Daniel Horn, Jeremy Sugerman,
Kayvon Fatahalian, Mike Houston, and Pat Hanrahan (Stanford)

GPU Acceleration of Iterative Clustering
Jesse D. Hall and J. C. Hart (Univ. of Illinois at Urbana Champaign)

GPU-Based Voxelization and its Application in Flow Modeling
Zhe Fan, Wei Li, Xiaoming Wei, and Arie Kaufman (SUNY Stony Brook)

GPU Floating Point Paranoia
Karl Hillesland and Anselmo Lastra (UNC Chapel Hill)

Fast Computation of Database Operations using Graphics Processors
Naga K. Govindaraju, Brandon Lloyd, Wei Wang, Ming Lin, and
Dinesh Manocha (UNC Chapel Hill)

Mio: An Instruction Scheduling Approach to Fast Multipass Partitioning
Andrew Riffel*, Aaron E. Lefohn*, Kiril Vidimce+, Mark Leone+,
and John D. Owens*,(* UC Davis, + Pixar Animation Studios)

Parallel Computing with Multiple GPUs on a Single Machine to Achieve Performance Gains
Robert Gulde, Michael Weeks, Scott Owen, and Yi Pan (Georgia State Univ.)

Quick-VDR: Interactive View-Dependent Rendering of Massive Models on Commodity GPU
Sung-Eui Yoon, Brian Salomon, Russell Gayle, and Dinesh Manocha (UNC Chapel Hill)

RapidCT: Acceleration of 3D Computed Tomography on GPUs
Fang Xu and Klaus Mueller (SUNY Stony Brook)

Towards Load Balanced Computations using GPU and CPU
Thomas Gierlinger and Poojan Prabhu
(Fraunhofer Institute for Computer Graphics, Germany)
Contributed Poster Presentations & Demos (II)
3:05pm – 4:35pm on Saturday, August 7, 2004

A Theoretical Case Study of Three Algorithms on the GPU: Depth Ordering, k-Selection and Matrix Multiplication
Sudipto Guha (UPENN), Shankar Krishnan (AT&T Labs – Research), and Suresh Venkatasubramanian Krishnan (AT&T Labs – Research)

Accelerating Line of Sight Computation Using GPUs
Brian Salomon, Naga Govindaraju, Russell Gayle, Avneesh Sud, Sung-Eui Yoon, Ming Lin, Dinesh Manocha (UNC Chapel Hill), Maria Bauer, Latika Eifert and Angel Rodrigues (RDECOM), Brett Butler (SAIC), and Michael Macedonia (PEO STRI)

A Versatile Stereo Implementation on Commodity Graphics Hardware
Ruigang Yang (University of Kentucky) and Marc Pollefeys (UNC Chapel Hill)

DiFi: Fast 3D Distance Field Computation using GPUs
Avneesh Sud, Miguel A. Otaduy, and Dinesh Manocha (UNC Chapel Hill)

Finding Mold Removal Directions using Graphics Hardware
Rahul Khardekar and Sara McMains (UC Berkeley)

GPUBench: Evaluating GPU Performance for Numerical and Scientific Applications
Ian Buck, Kayvon Fatahalian, and Pat Hanrahan (Stanford)

Parallel Computation On A Cluster of GPUs
Mike Houston, Kayvon Fatahalian, Jeremy Sugerman, Ian Buck, and Pat Hanrahan (Stanford)

Per-Pixel Evaluation of Parametric Surfaces on GPU
Takashi Kanai (Keio University SFC) and Yusuke Yasui (ASTOM Inc.)

Procedural Geometry Synthesis on the GPU
Patrick Lacz and J. C. Hart (Univ. of Illinois at Urbana Champaign)

Scout: A GPU-Accelerated Language for Visualization and Analysis
Patrick McCormick*, Jeff Inman*, Greg Roth+, James Ahrens*, and Charles Hansen+ (*Los Alamos National Laboratory, + University of Utah)

Simulation and Rendering of Viscous Fluid Paint on GPUs
William Baxter, Jeremy Wendt, and Ming Lin (UNC Chapel Hill)

Ultrasound Image Restoration on GPUs
Qi Wei and Dinesh K. Pai (University of British Columbia and Rutgers University)
Accelerating Molecular Dynamics with GPUs
Ian Buck, Vidya Rangasayee, Eric Darve, Vijay Pande, and Pat Hanrahan (Stanford)

Anisotropic Diffusion of Height Field Data using Multigrid Solver on GPU
Won-Ki Jeong, Tolga Tasdizen, and Ross Whitaker (University of Utah)

Fluid Simulations on GPU with Complex Boundary Conditions
Youquan Liu\textsuperscript{1,3}, Xuehui Liu\textsuperscript{1}, and Enhua Wu\textsuperscript{1,2}
\textsuperscript{1} - Institute of Software Chinese Academy of Sciences, Beijing
\textsuperscript{2} - University of Macau, Macao
\textsuperscript{3} - Chinese Academy of Sciences, China

GPU Accelerated Dispersion Simulation for Urban Security
Feng Qiu, Ye Zhao, Zhe Fan, Xiaoming Wei, Haik Lorenz, Jianning Wang,
Suzanne Yoakum-Stover, Arie Kaufman, and Klaus Mueller (SUNY Stony Brook)

GPU-Based Penetration Depth Computation for Haptic Texture Rendering
Miguel A. Otaduy, Nitin Jain, Aneesh Sud, and Ming C. Lin (UNC Chapel Hill)

GPU Cluster for Scientific Computing and Large-Scale Simulation
Zhe Fan, Feng Qiu, Arie Kaufman, and Suzanne Yoakum-Stover (SUNY Stony Brook)

Fast and Reliable Collision Culling using Graphics Hardware
Naga K. Govindaraju, Ming Lin, and Dinesh Manocha (UNC Chapel Hill)

Lattice-Based Flow Simulation on GPU
Ye Zhao, Zhe Fan, Wei Li, Arie Kaufman, and
Suzanne Yoakum-Stover (SUNY Stony Brook)

New Challenges for Cellular Automata Simulation on the GPU
John Tran, Don Jordan, and David Luebke (University of Virginia)

Particle-Based Fluid Simulation on GPU
Takashi Amada, Masataka Imura, Yoshihiro Yasumuro, Yoshitsugu Manabe, and
Kunihiro Chihara (Nara Institute of Science and Technology)

Lars Nyland (Colorado School of Mines),
Jan Prins (UNC Chapel Hill), and
Mark Harris (NVIDIA Corporation)

Unified Stream Processing Ray Tracer
Gabriel Moreno-Fortuny and Michael McCool (University of Waterloo)
Contributed Poster Presentations & Demos (IV)
2:10pm – 3:40pm on Sunday, August 8, 2004

AI on the GPU
Christian J. Darken, E. Ray Pursel, and J. Steve Correia (MOVES Institute, NPS)

Data-Dependent Multipass Control Flow on GPUs
Tiberiu Popa and Michael McCool (University of Waterloo)

Discrete Wavelet Transform on GPU
Jianqing Wang, Tien-Tsin Wong, Pheng-Ann Heng (Chinese University of Hong Kong),
and Chi-Sing Leung (City University of Hong Kong)

Efficient 3D Audio Processing with the GPU
Emmanuel Gallo and Nicolas Tsingos (REVES/INRIA Sophia-Antipolis)

Final Gathering on GPU
Toshiya Hachisuka (The University of Tokyo)

Functional Parallelism using Programmable GPUs
Ramgopal Rajagopalan, Dhrubajyoti Goswami, and S.P. Mudur (Concordia University)

Hybrid Volumetric Ray-Casting
Wei Hong, Feng Qiu, and Arie Kaufman (SUNY Stony Brook)

Implementation of Cellular Automata using a Graphics Processing Unit
Johannes Singler (University of Karlsruhe, Germany)

Merrimac – Supercomputing with Streams
Mattan Erez, Jung-Ho Ahn, Nuwan Jayasena, Timothy J. Knight,
Abhishek Das, Francois Labonte, Jayanth Gummaraju, William J. Dally,
Patrick Hanrahan, and Mendel Rosenblum (Stanford University)

Multi-Resolution Belief Propagation on the GPU for Phase-Unwrapping
E. Scott Larsen (UNC Chapel Hill),
Jonathan Yedidia, and Hanspeter Pfister (Mitsubishi Electric Research Laboratories)

Towards Real-time Space Carving with Graphics Hardware
Anselmo A. Montenegro, Luiz Velho, Paulo C. P. Carvalho (IMPA), and
Marcelo Gattass (Puc-Rio)

Understanding the Efficiency of GPU Algorithms for Matrix-Matrix Multiplication
Kayvon Fatahalian, Jeremy Sugerman, and Pat Hanrahan (Stanford)