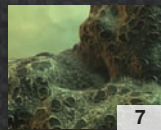
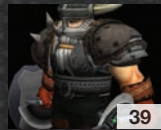


GEOMETRY



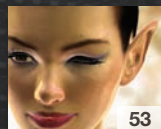
Generating Complex Procedural Terrains Using the GPU
Ryan Geiss
(NVIDIA Corporation)

7



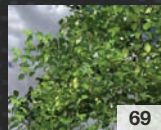
Animated Crowd Rendering
Bryan Dudash
(NVIDIA Corporation)

39



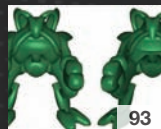
DirectX 10 Blend Shapes: Breaking the Limits
Tristan Lorach
(NVIDIA Corporation)

53



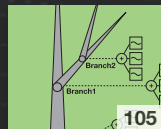
Next-Generation SpeedTree Rendering
Alexander Kharlamov
Iain Cantlay
Yury Stepanenko
(NVIDIA Corporation)

69



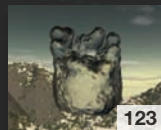
Generic Adaptive Mesh Refinement
Tamy Boubekeur
Christophe Schlick
(LaBRI—INRIA, University of Bordeaux)

93



GPU-Generated Procedural Wind Animations for Trees
Renaldas Zioma
(Electronic Arts/Digital Illusions CE)

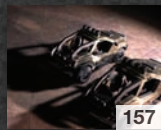
105



Point-Based Visualization of Metaballs on a GPU
Kees van Kooten
Gino van den Bergen
(Playlogic Game Factory)
Alex Telea
(Eindhoven University of Technology)

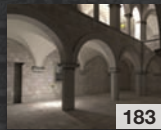
123

LIGHT AND SHADOWS



Summed-Area Variance Shadow Maps
Andrew Lauritzen
(University of Waterloo)

157



Interactive Cinematic Relighting with Global Illumination
Fabio Pellacini
(Dartmouth College)
Miloš Hašan
Kavita Bala
(Cornell University)

183



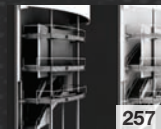
Parallel-Split Shadow Maps on Programmable GPUs
Fan Zhang
Hanqiu Sun
(The Chinese University of Hong Kong)
Oskari Nyman
(Helsinki University of Technology)

203



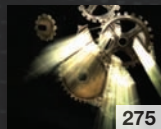
Efficient and Robust Shadow Volumes Using Hierarchical Occlusion Culling and Geometry Shaders
Martin Stich
(mental images)
Carsten Wächter
Alexander Keller
(Ulm University)

239



High-Quality Ambient Occlusion
Jared Hoberock
Yuntao Jia
(University of Illinois at Urbana-Champaign)

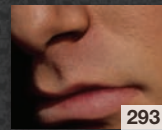
257



Volumetric Light Scattering as a Post-Process
Kenny Mitchell
(Electronic Arts)

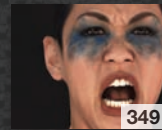
275

RENDERING



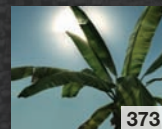
Advanced Techniques for Realistic Real-Time Skin Rendering
Eugene d'Eon
David Luebke
(NVIDIA Corporation)

293



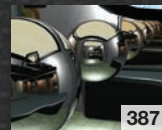
Playable Universal Capture
George Borshukov
Jefferson Montgomery
John Hable
(Electronic Arts)

349



Vegetation Procedural Animation and Shading in Crysis
Tiago Sousa
(Crytek)

373



Robust Multiple Specular Reflections and Refractions
Tamás Umenhoffer
(Budapest University of Tech. and Econ.)
Gustavo Patow
(University of Girona)
László Szirmay-Kalos
(Budapest University of Tech. and Econ.)

387



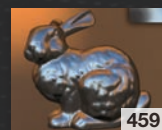
Relaxed Cone Stepping for Relief Mapping
Fabio Policarpo
(Perpetual Entertainment)
Manuel M. Oliveira
(Instituto de Informática—UFRGS)

409



Deferred Shading in Tabula Rasa
Rusty Koonce
(NCsoft Corporation)

429



GPU-Based Importance Sampling
Mark Colbert
(University of Central Florida)
Jaroslav Krivánek
(Czech Technical University in Prague)

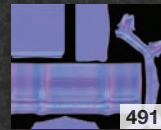
459

IMAGE EFFECTS



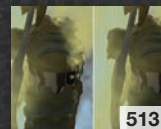
True Impostors
Eric Risser
(University of Central Florida)

481



Baking Normal Maps on the GPU
Diogo Teixeira
(Move Interactive)

491



High-Speed, Off-Screen Particles
Iain Cantlay
(NVIDIA Corporation)

513



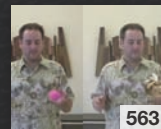
The Importance of Being Linear
Larry Gritz
Eugene d'Eon
(NVIDIA Corporation)

529



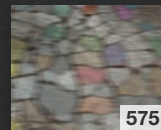
Rendering Vector Art on the GPU
Charles Loop
Jim Blinn
(Microsoft Research)

543



Object Detection by Color: Using the GPU for Real-Time Video Image Processing
Ralph Brunner
Frank Doepke
Bunny Laden
(Apple)

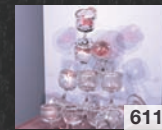
563



Motion Blur as a Post-Processing Effect
Gilberto Rosado
(Rainbow Studios)

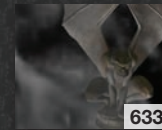
575

PHYSICS SIMULATION



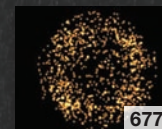
Real-Time Rigid Body Simulation on GPUs
Takahiro Harada
(University of Tokyo)

611



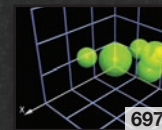
Real-Time Simulation and Rendering of 3D Fluids
Keenan Crane
(University of Illinois at Urbana-Champaign)
Ignacio Llamas
Sarah Tariq
(NVIDIA Corporation)

633



Fast N-Body Simulation with CUDA
Lars Nyland
Mark Harris
(NVIDIA Corporation)
Jan Prins
(University of North Carolina at Chapel Hill)

677



Broad-Phase Collision Detection with CUDA
Scott Le Grand
(NVIDIA Corporation)

697



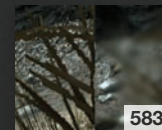
LCP Algorithms for Collision Detection Using CUDA
Peter Kipfer
(Havok)

723



Signed Distance Fields Using Single-Pass GPU Scan Conversion of Tetrahedra
Kenny Erleben
(University of Copenhagen)
Henrik Dohlmann
(3Dfacto R&D)

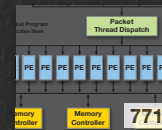
741



Practical Post-Process Depth of Field
Earl Hammon, Jr.
(Infinity Ward)

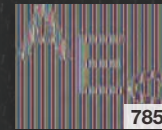
583

GPU COMPUTING



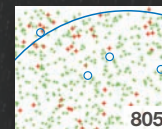
Fast Virus Signature Matching on the GPU
Elizabeth Seamans
(Juniper Networks)
Thomas Alexander
(Polytime)

771



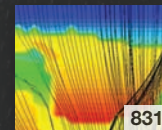
AES Encryption and Decryption on the GPU
Takeshi Yamanouchi
(SEGA Corporation)

785



Efficient Random Number Generation and Application Using CUDA
Lee Howes
David Thomas
(Imperial College London)

805



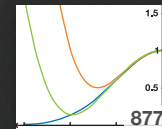
Imaging Earth's Subsurface Using CUDA
Bernard Deschizeaux
Jean-Yves Blanc
(CGGVeritas)

831



Parallel Prefix Sum (Scan) with CUDA
Mark Harris
(NVIDIA Corporation)
Shubhabrata Sengupta
John D. Owens
(University of California, Davis)

851



Incremental Computation of the Gaussian
Ken Turkowski
(Adobe Systems)

877



Using the Geometry Shader for Compact and Variable-Length GPU Feedback
Franck Diard
(NVIDIA Corporation)

891