

Saif Ali

Masters Student, Computer Science and Engineering, Arizona State University
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Academic

Education

- *MS*, Computer Science (AME), Arizona State University, Tempe, AZ (GPA 3.96, July 2005 - Present)
- *MS*, Computer Science, University of Cincinnati, Cincinnati, OH (GPA 4.0, Jan-May 05, Transferred)
- *Bachelors of Technology*, Computer Engineering, Jamia Millia Islamia, New Delhi (Aug 2000-Aug 2004)

Research Interests

- *Computer Graphics, Real time rendering, GPGPU*

Publications

- *Compressed Façade Displacement Maps*, Peter Wonka, Saif Ali, Jieping Ye. (Submitted to Eurographics 2007)
- *Sub-Millimeter rock surface texture as a measure of Aeolian abrasion maturity*, Nathan Bridges, Anshuman Razdan, Saif Ali, Rakesh Kushunapally, Julie Laity, Ronald Greeley, Eric Eddlemon, 2006 American Geophysical Union Fall Meeting.

Selected Projects

- *Compressed Façade Displacement Maps* (Fall 2006 – Present)
A solution for ray-tracing a special class of displacement maps, façade models, in the fragment shader. We contribute two main ideas: an efficient ray tracer for the special case of box like displacements maps and an encoding strategy to render a displacement map from compressed representations directly.
- *Fast Rendering of Terrain Heightfields on the GPU* (Spring 2006 – Fall 2006)
The objective is to develop a system to interactively ray-trace large heightfield data sets on current generation programmable graphics hardware. Developed a terrain renderer that uses a ray-caster implemented in the fragment shader. This method is based on relief-mapping but incorporates exact intersections and hierarchical subdivision of bounding boxes for faster ray intersections.
- *Dual Marching Tetrahedra (Dual MT) for Volume Rendering* (Fall 2005)
Dual MT is an algorithm for rendering iso-surfaces from volume data based on computation over a tetrahedral domain rather than a regular grid. It simplifies the implementation and introduces algorithmic and visual improvements over the conventional Marching Cubes algorithm.

Professional

Work Experience

- *Graduate Research Assistant*, PRISM Lab, ASU (Summer 2006 – present)
- *Graduate Teaching Assistant*, CSE Department, ASU (Fall 2005 – Spring 2006)
- *Assistant Systems Engineer-Trainee* – Tata Consultancy Service (Sept 2004 – Nov 2004)
- *Consultant*, Infonox Software Pvt. Ltd. (Dec 2002 –Jan 2003 & Dec 2003 – Jan 2004)

Awards and Honors

- *University Graduate Scholarship*, University of Cincinnati
- *Top Performer's Award*, Tata Consultancy Service

Membership of Professional and Academic Organizations

- *Student Member*, ACM SIGGRAPH
- *Head*, Editorial Board – IEEE Student Chapter, Jamia Millia Islamia, New Delhi, India
- *Member*, Organizing Committee IEEE Student Chapter, Jamia Millia Islamia, New Delhi, India

Guest Lectures

- *GPU Programming with GLSL*, Game Programming Class, ASU, Tempe, AZ (Oct 2006)
- *3D Programming with OpenGL*, Summer workshop, Jamia Millia Islamia, New Delhi (Jun 2004)

Skill Set

Programming Languages, Toolkits and Application Software

- C and C++ (Advanced Level, 6 years)
- Microsoft Visual Studio 6.0, .NET, 2005 (Intermediate Level, 3+ years)
- OpenGL, GLUT (Intermediate Level, 3+ year)
- GLSL and NVIDIA Cg toolkit (Intermediate Level, 1+ years)
- Java (Intermediate Level, 1 year)
- Adobe Photoshop, Rhinoceros, Geomagic Studio, AC3D, MATLAB

Natural Languages

- Hindi (fluent), English (fluent), Urdu (read, write)

Relevant Course Work

Arizona State University

Special Topics in Real Time Rendering, Advanced Computer Graphics I, Advanced Computer Graphics II (Scientific Visualization), Linear Algebra for Engineers, Wavelets and Fourier Analysis, Software Verification, Validation and Testing, Cognition and Perception in Hybrid Environments

University of Cincinnati

Advanced Algorithms I, Advanced Algorithms II, Advanced Programming with Java, Intelligent Systems

Leisure

Photography (<http://www.flickr.com/photos/saiftasveer>)
Outdoors (Member, University of Cincinnati Mountaineering Club, Cincinnati, Ohio)

References

Dr. Peter Wonka
Dr. Gregory Nielson
Dr. Anshuman Razdan