Gaurav Chaurasia

EMAIL: gchauras@mit.edu   URL: http://people.csail.mit.edu/gchauras/

Research Interests

Image-based rendering, 3D reconstruction, image warping, computational photography, GPU accelerated image processing

Experience

2015- Postdoctoral Associate, *Disney Research Zurich, Switzerland* Computer vision group

2014-2015 Postdoctoral Associate, *Massachusetts Institute of Technology, Cambridge MA, USA*
ADVISOR: Prof. Fredo Durand

Education

2010-2014 Ph.D in Computer Science, *INRIA Sophia Antipolis, France*
ADVISOR: Dr. George Drettakis
THESIS: Algorithms & perceptual analysis for interactive free viewpoint image-based navigation

2009-2010 M.Sc in Computer Science, *ENSIMAG, Grenoble, France*

2005-2009 B.Tech in Computer Science, *Indian Institute of Technology Delhi, India*
ADVISOR: Prof. Subodh Kumar
THESIS: Real time traffic simulation

Visiting Positions

Aug 2013 Visiting student, *Massachusetts Institute of Technology, MA, USA*   *(Advisor: Dr. Fredo Durand)*
Parallel execution of non-parallel recursive or IIR filters.

Aug 2012 Visiting student, *University of California Berkeley, CA, USA*   *(Advisor: Dr. Ravi Ramamoorthi)*
Procedural noise functions for synthesizing non-Gaussian textures.

Feb-Jun 2010 Intern, *INRIA Sophia Antipolis, France*   *(Advisor: Dr. George Drettakis)*
Image-based rendering for urban scenes.

Summer 2008 Intern, *NVIDIA Bangalore, India*
OpenGL-ES extensions for GPU driver for embedded systems, OpenGL-ES 2.0 conformance test suite bugs.

Summer 2007 Intern, *Dublin City University, Ireland*   *(Advisor: Dr. Derek Molloy)*
Memory exercises as 3D games and user studies to test effect of 3D user interfaces on human recall.

Publications

2016   ST Digumarti, A. Taneja, A. Thomas, G. Chaurasia, R. Siegwart, P. Beardsley. "Underwater 3D capture using a low-cost commercial depth camera", *WACV (to appear)*. [WWW] [DOI]

2015   M. Gharbi, Y. Shih, G. Chaurasia, J. Ragan-Kelley, S. Paris, F. Durand. "Transform recipes for efficient cloud photo enhancement", *ACM Trans. Graph. 34(6) (SIGGRAPH Asia 2015)*. [WWW] [DOI]

2015   S. Duchêne, C. Riant, G. Chaurasia, J. Lopez-Moreno, PY Laffont, S. Popov, A. Bousseau, G. Drettakis. "Multi view intrinsic decomposition & relighting", *ACM Trans. Graph. 34(5) (to be presented at SIGGRAPH 2016)*. [WWW] [DOI]

2015   G. Chaurasia, J. Ragan-Kelley, S. Paris, G. Drettakis, F. Durand. "Compiling high performance recursive filters", *High Performance Graphics*. [WWW] [DOI]

2015   M. Benoit, R. Guerchouche, PD Petit, E. Chapoulie, V. Manera, G. Chaurasia, G. Drettakis, P. Robert. "Is it possible to use highly realistic virtual reality in the elderly? A feasibility study with image-based rendering", *Journal*

of Neuropsychiatric Disease and Treatment. [www] [doi]

2014 E. Chapoulie, R. Guerchouche, PD Petit, G. Chaurasia, P. Robert, G. Drettakis. "Reminiscence therapy using image-based rendering in VR", *IEEE Virtual Reality.* [www] [doi]

2013 G. Chaurasia, S. Duchene, O. Sorkine-Hornung, G. Drettakis. "Depth synthesis and local warps for plausible image-based navigation", *ACM Trans. Graph. 32(3) (presented at SIGGRAPH 2013).* [www] [doi]

2013 P. Vangorp, C. Richardt, E.A. Cooper, G. Chaurasia, M.S. Banks, G. Drettakis. "Perception of perspective distortions in image-based rendering", *ACM Trans. Graph. 32(4) (SIGGRAPH 2013).* [www] [doi]

2011 G. Chaurasia, O. Sorkine, G. Drettakis. "Silhouette-aware warping for image-based rendering", *Comput. Graph. Forum 30(4) (EGSR 2011).* [www] [doi]

2011 P. Vangorp, G. Chaurasia, PY Laffont, R. Fleming, G. Drettakis. "Perception of visual artifacts in image-based rendering of façades", *Comput. Graph. Forum 30(4) (EGSR 2011).* [www] [doi]

2011 M. Cabral, P. Vangorp, G. Chaurasia, E. Chapoulie, M. Hachet, G. Drettakis. "A multimode immersive conceptual design system for architectural modeling & lighting", *IEEE Symposium on 3D User Interfaces (3DUI 2011).* [www] [doi]

2010 G. Chaurasia, B.R. Selvamani, N. Gupta, S. Kumar. "Virtual chaotic traffic simulation", *Indian Conference on Computer Vision, Graphics & Image Processing (ICVGIP 2010).* [www] [doi]

Professional Activities

Journal reviews   Visual Comput. 2016, ACM Trans. Graph. 2016, Comput. Graph. Forum 2015, IEEE Signal Process. Lett. 2015, Comput. & Graph. 2015, IEEE Trans. Visual. Comput. Graph. 2015, ACM Trans. Appl. Percept. 2014, J. Signal Image & Video Process. 2013

Conference reviews   Eurographics 2016, Pacific Graphics 2015, Pacific Graphics 2014, SIGGRAPH Asia 2013, SIGGRAPH 2012, Eurographics 2012

Supervision & Teaching

2015 TA: course 6.815/6.865 Digital & Computational Photography by Prof. Fredo Durand (MIT)

2013 Co-supervised Kritarth Anand *(undergraduate thesis, IIT Delhi/INRIA Sophia Antipolis)*

2013 Co-supervised Arunim Samat *(undergraduate thesis, IIT Delhi/INRIA Sophia Antipolis)*

Scholarships & Awards

Aug 2010 PhD fellowship (*Allocation de Recherche*) by the French ministry for PhD studies.

Aug 2009 Scholarship of Excellence (*Bourse d'Excellence*) by ENSIMAG for Master's studies.

May 2007 Scholarship for 12 week research internship 'ODCSSS-07' in Dublin by Science Foundation of Ireland.

Jun 2005 All India Rank 54 in IIT-JEE 2005 (entrance examination for Indian Institutes of Technology) amongst nearly 300,000 aspirants.

Technical Skills

C++, Matlab, OpenGL, GLSL, CUDA, OpenCV, Java, LaTeX, SVN, Git, Bash, Vim, Visual Studio

References

Available on request.