

# Gaurav Chaurasia

EMAIL: [gchauras@mit.edu](mailto: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 SIGGRAPH 2016, 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, L<sup>A</sup>T<sub>E</sub>X, SVN, Git, Bash, Vim, Visual Studio

## References

Available on request.