

Gaurav Chaurasia

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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, *IEEE Winter Conference on Applications of Computer Vision (WACV)*. [\[www\]](#) [\[doi\]](#)
- 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) (*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	ACM Transactions on Graphics	2016
	ACM Transactions on Applied Perception	2014
	Computer Graphics Forum	2015
	IEEE Transactions on Visualization and Computer Graphics	2015
	The Visual Computer	2016
	Computers & Graphics	2015
	IEEE Signal Processing Letters	2015
Conference reviews	Journal of Signal Image & Video Processing	2013
	SIGGRAPH	2012,2016
	SIGGRAPH Asia	2013
	Eurographics	2012,2016
	Pacific Graphics	2014,2015

Supervision & Teaching

Spring 2016	TA: Advanced Methods in Computer Graphics Seminar 252-5704-00L	ETH Zurich
Spring 2015	TA: Digital & Computational Photography 6.815/6.865	MIT
Spring 2013	Co-supervised Kritarth Anand (undergraduate thesis)	INRIA Sophia Antipolis/IIT Delhi
Spring 2013	Co-supervised Arunim Samat (undergraduate thesis)	INRIA Sophia Antipolis/IIT Delhi

Scholarships & Awards

Aug 2010	PhD fellowship (<i>Allocation de Recherche</i>) by the French ministry for PhD studies.
Aug 2009	Scholarship of Excellence (<i>Bourse d'Excellence</i>) 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.