Gaurav Chaurasia

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Research Interests

Image-based rendering	Multi-view stereo	Image warping
Computational photography	GPU accelerated image processing	

Current

2014- **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: Dr. Subodh Kumar
THESIS: Real time traffic simulation

Visiting Positions

Summer 2013 **Visiting student**, *Massachusetts Institute of Technology, MA, USA*   *(Advisor: Dr. Fredo Durand)*
Halide (halide-lang.org) frontend for parallel execution of non-parallel algorithms like recursive filters.

Summer 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

2015 S. Duchene, C. Riant, **G. Chaurasia**, S. Popov, PY Laffont, J. Lopez-Moreno, A. Bousseau, G. Drettakis. "Multi View Intrinsic Decomposition & Relighting", *ACM Trans. Graph. (conditionally accepted).* [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 (conditionally accepted).* [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): 1223-1232 (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): 1241-1250 (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]

Talks

Jul 2013 Algorithms and Perception for Interactive Free-Viewpoint Image-Based Navigation, *Microsoft Research Redmond (eXtreme Computing Group).* [Talk]

Sept 2013 Algorithms for Interactive Free-Viewpoint Image-Based Navigation, *MIT CSAIL (Graphics Lunch).* [Abstract]

Professional Activities

Journals Reviewer for ACM Transations on Applied Perception, IEEE Transactions on Visualization and Computer Graphics, Computers & Graphics, Journal of Signal, Image and Video Processing

Conferences Reviewer for Pacific Graphics 2014, SIGGRAPH Asia 2013, SIGGRAPH 2012, Eurographics 2012

Supervision & Teaching

2015 Teaching assisstant: course 6.815/6.865 Digital & Computational Photography by Prof. Fredo Durand
2013 (MIT) 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 3 years of PhD studies.
Aug 2009 Scholarship of Excellence (*Bourse d'Excellence*) by ENSIMAG for one year of 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.