

# GAURAV CHAURASIA

DISNEY RESEARCH ZURICH, STAMPFENBACHSTRASSE 48, ZURICH 8006, SWITZERLAND

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## RESEARCH INTERESTS

Image-based rendering  
Model extraction from RGB-D data  
Compilers and GPU acceleration for image synthesis  
Convolutional Neural networks for computational photography  
Neural networks for 2D/3D synthesis (exploratory)

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## EXPERIENCE

2015-    **DISNEY RESEARCH ZURICH**    *Zurich, Switzerland*  
*Postdoctoral Associate (computer vision)*

2014-2015    **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**    *Cambridge MA, USA*  
*Postdoctoral Associate (Advisor: Prof. Frédo Durand)*

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## EDUCATION

2010-2014    **INRIA**    *Sophia Antipolis, France*  
*Ph.D in Computer Science (Advisor: Dr. George Drettakis)*  
DISSERTATION: Algorithms and perceptual analysis for interactive free viewpoint image-based navigation

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

2005-2009    **INDIAN INSTITUTE OF TECHNOLOGY DELHI**    *New Delhi, India*  
*B.Tech in Computer Science (Advisor: Prof. Subodh Kumar)*  
DISSERTATION: Real time traffic simulation

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## VISITING POSITIONS

Aug 2013    **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**    *Cambridge MA, USA*  
*Visiting student (Advisor: Prof. Frédo Durand)*  
Parallel execution of non-parallel recursive filters.

Aug 2012    **UNIVERSITY OF CALIFORNIA BERKELEY**    *Berkeley CA, USA*  
*Visiting student (Advisor: Prof. Ravi Ramamoorthi)*  
Procedural noise functions for synthesizing non-Gaussian textures.

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

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

Research intern (Advisor: Dr. Derek Molloy)

Memory exercises as 3D games and user studies to test effect of 3D user interfaces on human recall.

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#### PUBLICATIONS

- 2016 M. Gharbi, G. Chaurasia, S. Paris, F. Durand  
Deep joint demosaicking and denoising  
*ACM Trans. Graph.* 35(6) (SIGGRAPH Asia) [www] [doi]
- 2016 ST Digumarti, G. Chaurasia, A. Taneja, A. Thomas, 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) [www] [doi]
- 2015 S. Duchêne, C. Riant, G. Chaurasia, J. Lopez-Moreno, PY Laffont, S. Popov, A. Bousseau, G. Drettakis  
Multi view intrinsic decomposition and relighting  
*ACM Trans. Graph.* 34(5) [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) [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) [www] [doi]
- 2011 G. Chaurasia, O. Sorkine, G. Drettakis  
Silhouette-aware warping for image-based rendering  
*Comput. Graph. Forum* 30(4) (EGSR) [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) [www] [doi]
- 2011 M. Cabral, P. Vangorp, G. Chaurasia, E. Chapoulie, M. Hachet, G. Drettakis  
A multimode immersive conceptual design system for architectural modeling and lighting  
*IEEE Symposium on 3D User Interfaces (IEEE 3DUI)* [www] [doi]

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

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#### PROFESSIONAL ACTIVITIES

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|------------|--|------------------|
| Journal    | ACM Transactions on Graphics.....                              | 2016             |
| reviews    | ACM Transactions on Applied Perception.....                    | 2014             |
|            | Computer Graphics Forum .....                                  | 2015             |
|            | IEEE Transactions on Visualization and Computer Graphics ..... | 2015, 2016       |
|            | The Visual Computer.....                                       | 2016, 2017       |
|            | Computers and Graphics .....                                   | 2015, 2017       |
|            | IEEE Signal Processing Letters .....                           | 2015             |
|            | Journal of Signal Image and Video Processing.....              | 2013             |
| Conference | SIGGRAPH.....  | 2012, 2016       |
| reviews    | SIGGRAPH Asia .....  | 2013, 2016       |
|            | Eurographics .....   | 2012, 2016       |
|            | High Performance Graphics .....                                | 2016             |
|            | Pacific Graphics .....   | 2014, 2015, 2016 |
|            | Virtual Reality Science & Technology.....                      | 2016             |

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#### SUPERVISION

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|-------------|---|----------------------------------|
| Autumn 2016 | Andrin Jenal (master thesis) .....          | ETH Zurich                       |
| Spring 2013 | Kritarth Anand (undergraduate thesis) ..... | INRIA Sophia Antipolis/IIT Delhi |
| Spring 2013 | Arunim Samat (undergraduate thesis) .....   | INRIA Sophia Antipolis/IIT Delhi |

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#### TEACHING

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| Autumn 2016 | Advanced Topics in Computer Graphics & Vision Seminar 252-5701-00L ... | ETH Zurich |
| Spring 2016 | Advanced Topics in Computer Graphics Seminar 252-5704-00L .....        | ETH Zurich |
| Spring 2015 | TA: Digital & Computational Photography 6.815/6.865 .....              | MIT        |

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#### SCHOLARSHIPS AND AWARDS

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| 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. |

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#### TECHNICAL SKILLS

C++, MATLAB, Python, OpenGL, GLSL, CUDA, OpenCV, Java, L<sup>A</sup>T<sub>E</sub>X, SVN, Git, Bash, Vim, Visual Studio

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#### REFERENCES

Dr. George Drettakis  
*Director of Research, INRIA Sophia Antipolis, France*  
 ☞ <http://www-sop.inria.fr/members/George.Drettakis/>    ✉ [george.drettakis@inria.fr](mailto:george.drettakis@inria.fr)

Prof. Frédo Durand

*Professor, Massachusetts Institute of Technology, Cambridge MA, USA*

🏠 <http://people.csail.mit.edu/fredo/>    ✉ [fredo@mit.edu](mailto:fredo@mit.edu)

Dr. Sylvain Paris

*Senior Researcher, Adobe Research, Cambridge MA, USA*

🏠 <http://people.csail.mit.edu/sparis/>    ✉ [sparis@adobe.com](mailto:sparis@adobe.com)