

# GAURAV CHAURASIA

DISNEY RESEARCH ZURICH, STAMPFENBACHSTRASSE 48, ZURICH 8006, SWITZERLAND

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## RESEARCH INTERESTS

Image-based rendering and 3D reconstruction  
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

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## EXPERIENCE

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|----------------|---|----------------------------|
| 2015–till date | <b>DISNEY RESEARCH ZURICH</b><br><i>Postdoctoral Associate (computer vision)</i>                            | <i>Zurich, Switzerland</i> |
| 2014–2015      | <b>MASSACHUSETTS INSTITUTE OF TECHNOLOGY</b><br><i>Postdoctoral Associate (Adviser: Prof. Frédo Durand)</i> | <i>Cambridge MA, USA</i>   |

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## EDUCATION

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| 2010–2014 | <b>INRIA</b><br><i>Ph.D in Computer Science (Adviser: Dr. George Drettakis)</i><br>DISSERTATION: Algorithms and perceptual analysis for interactive free viewpoint image-based navigation | <i>Sophia Antipolis, France</i> |
| 2009–2010 | <b>ENSIMAG</b><br><i>M.Sc in Computer Science</i>   | <i>Grenoble, France</i>         |
| 2005–2009 | <b>INDIAN INSTITUTE OF TECHNOLOGY DELHI</b><br><i>B.Tech in Computer Science (Adviser: Prof. Subodh Kumar)</i><br>DISSERTATION: Real time traffic simulation                              | <i>New Delhi, India</i>         |

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## VISITING POSITIONS

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|--------------|---|---------------------------------|
| Aug 2013     | <b>MASSACHUSETTS INSTITUTE OF TECHNOLOGY</b><br><i>Visiting student (Adviser: Prof. Frédo Durand)</i><br>Parallel execution of non-parallel recursive filters.              | <i>Cambridge MA, USA</i>        |
| Aug 2012     | <b>UNIVERSITY OF CALIFORNIA BERKELEY</b><br><i>Visiting student (Adviser: Prof. Ravi Ramamoorthi)</i><br>Procedural noise functions for synthesizing non-Gaussian textures. | <i>Berkeley CA, USA</i>         |
| Feb–Jun 2010 | <b>INRIA</b><br><i>Research intern (Adviser: Dr. George Drettakis)</i><br>Image-based rendering for urban scenes.   | <i>Sophia Antipolis, France</i> |
| Summer 2008  | <b>NVIDIA</b><br><i>Intern (Embedded graphics group)</i><br>OpenGL-ES extensions for GPU driver for embedded systems, OpenGL-ES 2.0 conformance test suite bugs.            | <i>Bangalore, India</i>         |

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

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**PUBLICATIONS**

- 2016 **Deep joint demosaicking and denoising**  
M. Gharbi, G. Chaurasia, S. Paris, F. Durand  
*ACM Transactions on Graphics (SIGGRAPH Asia)* [www] [doi]
- Underwater 3D capture using a low-cost commercial depth camera**  
ST Digumarti, G. Chaurasia, A. Taneja, A. Thomas, R. Siegwart, P. Beardsley  
*IEEE Winter Conference on Applications of Computer Vision (WACV)* [www] [doi]
- 2015 **Transform recipes for efficient cloud photo enhancement**  
M. Gharbi, Y. Shih, G. Chaurasia, J. Ragan-Kelley, S. Paris, F. Durand  
*ACM Transactions on Graphics (SIGGRAPH Asia)* [www] [doi]
- Multi view intrinsic decomposition and relighting**  
S. Duchêne, C. Riant, G. Chaurasia, J. Lopez-Moreno, PY Laffont, S. Popov, A. Bousseau, G. Drettakis  
*ACM Transactions on Graphics (presented at SIGGRAPH)* [www] [doi]
- Compiling high performance recursive filters**  
G. Chaurasia, J. Ragan-Kelley, S. Paris, G. Drettakis, F. Durand  
*High Performance Graphics* [www] [doi]
- Is it possible to use highly realistic virtual reality in the elderly? A feasibility study with image-based rendering**  
M. Benoit, R. Guerchouche, PD Petit, E. Chapoulie, V. Manera, G. Chaurasia, G. Drettakis, P. Robert  
*Journal of Neuropsychiatric Disease and Treatment* [www] [doi]
- 2014 **Reminiscence therapy using image-based rendering in VR**  
E. Chapoulie, R. Guerchouche, PD Petit, G. Chaurasia, P. Robert, G. Drettakis  
*IEEE Virtual Reality (IEEE VR)* [www] [doi]
- 2013 **Depth synthesis and local warps for plausible image-based navigation**  
G. Chaurasia, S. Duchene, O. Sorkine-Hornung, G. Drettakis  
*ACM Transactions on Graphics (presented at SIGGRAPH)* [www] [doi]
- Perception of perspective distortions in image-based rendering**  
P. Vangorp, C. Richardt, E.A. Cooper, G. Chaurasia, M.S. Banks, G. Drettakis  
*ACM Transactions on Graphics (SIGGRAPH)* [www] [doi]
- 2011 **Silhouette-aware warping for image-based rendering**  
G. Chaurasia, O. Sorkine, G. Drettakis  
*Computer Graphics Forum (Eurographics Symposium on Rendering)* [www] [doi]
- Perception of visual artifacts in image-based rendering of façades**  
P. Vangorp, G. Chaurasia, PY Laffont, R. Fleming, G. Drettakis  
*Computer Graphics Forum (Eurographics Symposium on Rendering)* [www] [doi]
- A multimode immersive conceptual design system for architectural modeling and lighting**  
M. Cabral, P. Vangorp, G. Chaurasia, E. Chapoulie, M. Hachet, G. Drettakis  
*IEEE Symposium on 3D User Interfaces (IEEE 3DUI)* [www] [doi]

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

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#### SUPERVISED THESES

- Spring 2017 **RNN-based generative model for learning and synthesis of tree skeletons**  
Andrin Jenal  
*Master's thesis, ETH Zurich*

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#### TEACHING

- 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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#### 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, 2017  |
|            | Eurographics.....2012, 2016   |
|            | High Performance Graphics ..... 2016                                      |
|            | Pacific Graphics.....2014, 2015, 2016                                     |
|            | Virtual Reality Science & Technology.....2016                             |

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#### SCHOLARSHIPS AND 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.

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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

Available on request.