

# Stanford

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## Gordon Wetzstein

Assistant Professor of Electrical Engineering and, by courtesy, of Computer Science

### Bio

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#### BIO

Gordon Wetzstein is an Assistant Professor of Electrical Engineering and, by courtesy, of Computer Science at Stanford University. He is the leader of the Stanford Computational Imaging Lab, an interdisciplinary research group focused on advancing imaging, microscopy, and display systems. At the intersection of computer graphics, machine vision, optics, scientific computing, and perception, Prof. Wetzstein's research has a wide range of applications in next-generation consumer electronics, scientific imaging, human-computer interaction, remote sensing, and many other areas. Prior to joining Stanford in 2014, Prof. Wetzstein was a Research Scientist in the Camera Culture Group at the MIT Media Lab. He received a Ph.D. in Computer Science from the University of British Columbia in 2011 and graduated with Honors from the Bauhaus in Weimar, Germany before that. His doctoral dissertation focuses on computational light modulation for image acquisition and display and won the Alain Fournier Ph.D. Dissertation Annual Award. He organized the IEEE 2012 and 2013 International Workshops on Computational Cameras and Displays as well as the 2017 Int. Conference on Computational Photography, founded displayblocks.org as a forum for sharing computational display design instructions with the DIY community, and presented a number of courses on Computational Displays and Computational Photography at ACM SIGGRAPH. Gordon is the recipient of an NSF CAREER award, he won best paper awards at the International Conference on Computational Photography (ICCP) in 2011 and 2014 as well as a Laval Virtual Award in 2005.

#### ACADEMIC APPOINTMENTS

- Assistant Professor, Electrical Engineering
- Assistant Professor (By courtesy), Computer Science
- Member, Bio-X
- Member, Stanford Neurosciences Institute

#### ADMINISTRATIVE APPOINTMENTS

- Faculty Co-director, Stanford Center for Image Systems Engineering (SCIEN), (2017- present)

#### HONORS AND AWARDS

- Laval Virtual Award, Laval Virtual (2005)
- Alain Fournier Ph.D. Dissertation Annual Award, Vancouver Foundation (2011)
- Best Paper Award, IEEE International Conference on Computational Photography (2011)
- Best Poster Award, Computation for Design and Optimization (CDO) Symposium (2013)
- Best Paper Award, IEEE International Conference on Computational Photography (2014)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Technical Papers Committee, ACM SIGGRAPH Asia (2015 - present)

- Technical Papers Committee, ACM SIGGRAPH (2014 - present)
- Program Committee, Pacific Graphics (2014 - 2014)
- Program Committee, ACM SIGGRAPH Asia Workshops (2014 - 2014)
- Program Committee, Eurographics Short Papers (2014 - 2014)
- Program Committee, IEEE CVPR Workshop on Computational Cameras and Displays (CCD) (2014 - 2014)
- Program Committee, Eurographics Symposium on Rendering (2014 - 2014)
- Program Committee, ACM SIGGRAPH Asia Emerging Technologies (2014 - 2014)
- Program Committee, International Conference on Computational Photography (ICCP) (2014 - 2014)
- Program Committee, SIBGRAPI (2014 - 2014)
- Program Co-Chair, IEEE CVPR Workshop on Computational Cameras and Displays (CCD) (2013 - 2013)
- Program Committee, International Conference on Computational Photography (ICCP) (2013 - 2013)
- Program Committee, International Conference on Computer-Aided Design and Computer Graphics (CAD/Graphics) (2013 - 2013)
- Program Committee, ACM SIGGRAPH Asia Emerging Technologies (2013 - 2013)
- Program committee, ACM SIGGRAPH General Submissions (2012 - 2013)
- Program Co-Chair, IEEE CVPR Workshop on Computational Cameras and Displays (CCD) (2012 - 2012)
- Program Committee, ACCV International Workshop on Computational Photography and Low-Level Vision (2012 - 2012)
- Program Committee, IEEE International Symposium on Mixed and Augmented Reality (ISMAR) (2010 - 2010)
- Program Committee, IEEE International Workshop on Projector-Camera Systems (PROCAMS) (2007 - 2007)

## PROFESSIONAL EDUCATION

- Dipl., Bauhaus University , Media Systems Science (2006)
- Ph.D., University of British Columbia , Computer Science (2011)

## PATENTS

- G. Wetzstein, D. Lanman, M. Hirsch, R. Raskar. "United States Patent 13736769 Tensor Display", Massachusetts Institute of Technology
- G. Wetzstein, I. Ihrke, W. Heidrich. "United States Patent 2011/0267482 A1 Multiplexed Imaging", University of British Columbia
- O. Bimber, A. Emmerling, G. Wetzstein, C. Nitschke, T. Klemmer. "Germany Patent NA "Verfahren und Vorrichtung zur Darstellung eines digitalen Bildes auf einer geometrisch und photometrisch nicht-trivialen Oberflaehe", Bauhaus University Weimar
- M. Grosse, G. Wetzstein, O. Bimber, A. Grundhofer. "United States Patent NA Coded Aperture Projection", Bauhaus University Weimar
- M. Hirsch, G. Wetzstein, V. Lee, R. Raskar. "United States Patent NA A Compressive Light Field Projection System", Massachusetts Institute of Technology
- F. Heide, G. Wetzstein, J. Gregson, R. Raskar, W. Heidrich. "United States Patent NA Compressive Superresolution Display", Massachusetts Institute of Technology
- D. Lanman, G. Wetzstein, M. Hirsch, W. Heidrich, R. Raskar. "United States Patent NA Polarization Fields", Massachusetts Institute of Technology
- K. Marwah, G. Wetzstein, R. Raskar. "United States Patent NA Compressive Light Field Photography", Massachusetts Institute of Technology

## LINKS

- <https://stanford.edu/~gordonwz/>: <http://web.stanford.edu/~gordonwz>
- Google Scholar Profile: <https://scholar.google.com/citations?user=VOF45S0AAAAJ&hl=en>

## Teaching

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### COURSES

2017-18

- Computational Imaging and Display: CS 448I, EE 367 (Win)
- Seminar Series for Image Systems Engineering: EE 292E (Aut, Win, Spr)
- Virtual Reality: EE 267 (Spr)

#### 2016-17

- Computational Imaging and Display: CS 448I, EE 367 (Win)
- Digital Image Processing: CS 232, EE 368 (Aut)
- Image Systems Engineering: EE 292E (Win, Spr)
- Virtual Reality: EE 267 (Spr)

#### 2015-16

- Computational Imaging and Display: CS 448I, EE 367 (Win)
- Designing Civic Technologies with Virtual Reality: EE 392D (Aut)
- Digital Image Processing: CS 232, EE 368 (Aut)
- Virtual Reality: EE 267 (Spr)

#### 2014-15

- Computational Imaging and Display: EE 367 (Win)
- Digital Image Processing: CS 232, EE 368 (Spr)

## STANFORD ADVISEES

### Doctoral Dissertation Reader (AC)

Henryk Blasinski

### Postdoctoral Faculty Sponsor

Michael Broxton, Donald Dansereau, Felix Heide, Matthew O'Toole

### Master's Program Advisor

Paphop Sawasdee

### Doctoral (Program)

Vincent Simon Sitzmann

## Publications

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### PUBLICATIONS

- **Doppler Time-of-Flight Imaging** *ACM TRANSACTIONS ON GRAPHICS*  
Heide, F., Heidrich, W., Hullin, M., Wetzstein, G.  
2015; 34 (4)
- **The Light Field Stereoscope Immersive Computer Graphics via Factored Near-Eye Light Field Displays with Focus Cues** *ACM TRANSACTIONS ON GRAPHICS*  
Huang, F., Chen, K., Wetzstein, G.  
2015; 34 (4)
- **Toward BxDF Display using Multilayer Diffraction** *ACM TRANSACTIONS ON GRAPHICS*  
Ye, G., Jolly, S., Bove, V. M., Dai, Q., Raskar, R., Wetzstein, G.  
2014; 33 (6)
- **Wide field of view compressive light field display using a multilayer architecture and tracked viewers** *JOURNAL OF THE SOCIETY FOR INFORMATION DISPLAY*

Chen, R., Maimone, A., Fuchs, H., Raskar, R., Wetzstein, G.  
2014; 22 (10): 525-534