

Gordon Wetzstein

Curriculum Vitae

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Education and Experience

- since 09/14 **Assistant Professor**, *Stanford University, Electrical Engineering*, Stanford, CA.
- since 09/14 **Assistant Professor**, *Stanford University, Computer Science (by courtesy)*, Stanford, CA.
- 10/11 – 08/14 **Research Scientist**, *Massachusetts Institute of Technology*, Cambridge, MA.
Funded by an NSERC Postdoctoral Fellowship (PDF) and the DARPA SCENICC program.
- 09/06 – 09/11 **Doctor of Philosophy**, *University of British Columbia, Computer Science*, Vancouver, BC.
Computer Science Department; Alain Fournier Ph.D. Dissertation Award
- 10/00 – 06/06 **Diplom**, *Bauhaus-Universität Weimar*, Germany.
Media System Science; summa cum laude

Awards and Fellowships

- 2020 **SPIE Early Career Achievement Award**.
- 2019 **Presidential Early Career Award for Scientists and Engineers (PECASE)**.
- 2018 **ACM SIGGRAPH Significant New Researcher Award**.
- 2018 **Sloan Fellowship**.
- 2018 **Qualcomm Faculty Award**.
- 2017 **Scientist of the Year Award, IS&T Electronic Imaging**.
- 2016 **NSF CAREER Award**.
- 2016 **Okawa Research Grant**.
- 2015 **Google Faculty Research Award**.
- 2014 – 2017 **Terman Faculty Fellowship**.
- 2012 – 2014 **Postdoctoral Fellowship (PDF)**, *National Sciences and Engineering Research Council of Canada (NSERC)*.
- 2012 **Alain Fournier Ph.D. Dissertation Annual Award (Best Canadian Computer Graphics Thesis in 2011)**, *Awarded at Graphics Interface International Conference, 2012*.
- 2009 – 2011 **Theodore E Arnold Fellowship**, *University of British Columbia (Vancouver, Canada)*.
- 2008 – 2009 **Walter C Koerner Fellowship**, *University of British Columbia (Vancouver, Canada)*.
- 2005 **Laval Virtual Award**, *SmartProjector, Laval Virtual International Conference on Virtual Reality, 2005*.

Best Paper and Demo Awards

- 2019 **Outstanding New Directions Award (Honorable Mention)**, *Sitzmann et al., Scene Representation Networks: Continuous 3D-Structure-Aware Neural Scene Representations, NeurIPS, 2019*.

- 2018 **Best Student Paper (Emil Wolf Student Paper Prize)**, *Chang et al., Optical Convolutional Neural Networks with Optimized Phase Masks for Image Classification*, OSA Frontiers in Optics Conference, 2018.
- 2018 **Best Demo Award (DCEXPO Special Prize)**, *Padmanaban et al., Autofocals: gaze-contingent eyeglasses for presbyopes*, ACM SIGGRAPH Emerging Technologies, 2018.
- 2016 **Best Demo Award**, *Konrad et al., Computational Light Field and Monovision Near-eye Displays*, IEEE International Conference on Computational Photography (ICCP), 2016.
- 2016 **Conference Best Paper for Industry Award**, *Thatte et al., Depth Augmented Stereo Panorama for Cinematic Virtual Reality with Focus Cues*, IEEE International Conference on Image Processing (ICIP), 2016.
- 2016 **Best Paper (Honorable Mention)**, *Serrano et al., Convolutional Sparse Coding for High Dynamic Range Imaging*, Eurographics, 2016.
- 2014 **Best Paper Award**, *Hirsch et al., A Switchable Light Field Camera Architecture with Angle Sensitive Pixels and Dictionary-based Sparse Coding*, IEEE International Conference on Computational Photography (ICCP), 2014.
- 2013 **Best Poster Award**, *Wetzstein et al., Compressive Cameras and Displays*, Computation for Design and Optimization (CDO) Symposium, 2013.
- 2011 **Best Paper Award**, *Wetzstein et al., Hand-Held Schlieren Photography with Light Field Probes*, IEEE International Conference on Computational Photography (ICCP), 2011.

Students supervised

Postdocs **Yifan “Evan” Peng**, *Stanford*, 2018–.

Julien Martel, *Stanford*, 2019–.

Joshua Rapp, *Stanford*, 2020–.

PhD **David Lindell**, *Stanford (EE)*, 2016–, Stanford SGF.

Hayato Ikoma, *Stanford (EE)*, 2016–.

Mark Nishimura, *Stanford (EE)*, 2018–.

Brooke Lee Krajancich, *Stanford (EE)*, 2019–, Knight-Hennessy Scholar.

Alex William Bergman, *Stanford (EE)*, 2019–, Stanford SGF.

Cindy Nguyen, *Stanford (EE)*, 2019–, NSF GRFP.

Suyeon Choi, *Stanford (EE)*, 2019–, Kwanjeong Scholarship & Korea Government Scholarship.

Manu Gopakumar, *Stanford (EE)*, 2020–, Stanford SGF.

Qingqing Zhao, *Stanford (EE)*, 2020–.

Alumni **Chris Metzler**, *Stanford Postdoc*, 2018–2020, ORISE Fellow.

now Assistant Professor (CS) at U Maryland

Matthew O’Toole, *Stanford Postdoc*, 2016–2018, Banting Fellow.

now Assistant Professor (CS) at CMU

Felix Heide, *Stanford Postdoc*, 2016–2018.

now Assistant Professor (CS) at Princeton

Donald Dansereau, *Stanford Postdoc*, 2016–2018.

now Assistant Professor (ME) at University of Sydney

Michael Broxton, *Stanford Postdoc*, 2017–2018.
now Research Scientist at Google

Vincent Sitzmann, *Stanford (EE)*, 2017–2020, Stanford SGF.
now Postdoc at MIT

Nitish Padmanaban, *Stanford PhD (EE)*, 2015–2020, NSF GRFP.
now at Zinn Labs

Robert Konrad, *Stanford PhD (EE)*, 2014–2020.
now CEO at Zinn Labs

Isaac Kauvar, *Stanford PhD (EE)*, 2014–2020, *co-advised with Karl Deisseroth, NSF GRFP.
now Postdoc at Stanford

Julie Chang, *Stanford PhD (BioE)*, 2014–2019, NSF GRFP.
now at Apple

Samuel Yang, *Stanford PhD (EE)*, 2014–2016, *co-advised with Karl Deisseroth, NDSEG GF.
now at Google

Rose Rustowicz, *Stanford MSc (EE)*, 2017–2018.

Keenan Molner, *Stanford MSc (EE)*, 2016–2017.
now at Apple

Shikhar Shrestha, *Stanford MSc (ME)*, 2014–2016.
now CEO at Ambient.ai

Liang Shi, *Stanford MSc (EE)*, 2014–2016.
now PhD at MIT

Amit Pal Kohli, *Stanford Undergrad (EE)*, 2019–2020.

Anastasios Nikolas Angelopoulos, *Stanford Undergrad (EE)*, 2018–2019.

Ana Serrano, *University of Zaragoza, Visiting Student*, Summers of 2015, 2016.

Xuemei Hu, *Tsinghua University, Visiting Student*, 2015–2016.

Journal publications

- 76 **Dirty Pixels: Optimizing Image Classification Architectures for Raw Sensor Data**, S. Diamond*, V. Sitzmann*, F. Julca*, S. Boyd, G. Wetzstein, F. Heide, 2021, ACM Transactions on Graphics (presented at SIGGRAPH).
- 75 **Optimizing image quality for holographic near-eye displays with Michelson Holography**, S. Choi, J. Kim, Y. Peng, G. Wetzstein, 2021, OSA Optica.
- 74 **Keyhole Imaging: Non-Line-of-Sight Imaging and Tracking of Moving Objects Along a Single Optical Path**, C. Metzler, D. Lindell, G. Wetzstein, 2021, IEEE Transactions on Computational Imaging.
- 73 **Event Based, Near Eye Gaze Tracking Beyond 10,000 Hz**, A. Angelopoulos*, J.N.P. Martel*, A. Kohli, J. Conradt, G. Wetzstein, 2021, IEEE Transactions on Visualization and Computer Graphics (Proc. VR).
- 72 **Inference in artificial intelligence with deep optics and photonics**, G. Wetzstein, A. Ozcan, S. Gigan, S. Fan, D. Englund, M. Soljacic, C. Denz, D.A.B. Miller, D. Psaltis, 2020, Nature (review paper).
- 71 **Three-Dimensional Imaging Based on Confocal Diffuse Tomography**, D. Lindell, G. Wetzstein, 2020, Nature Communications.

- 70 **Neural Holography with Camera-in-the-loop Training**, Y. Peng, S. Choi, N. Padmanaban, G. Wetzstein, 2020, ACM Transactions on Graphics (SIGGRAPH Asia).
- 69 **Optimizing Depth Perception in Virtual and Augmented Reality through Gaze-contingent Stereo Rendering**, B. Krajancich, P. Kellnhofer, G. Wetzstein, 2020, ACM Transactions on Graphics (SIGGRAPH Asia).
- 68 **Neural Light Field 3D Printing**, Q. Zheng, V. Babaei, G. Wetzstein, H.-P. Seidel, M. Zwicker, G. Singh, 2020, ACM Transactions on Graphics (SIGGRAPH Asia).
- 67 **Gaze-contingent Ocular Parallax Rendering for Virtual Reality**, R. Konrad, A. Agelopoulos, G. Wetzstein, 2020, ACM Transactions on Graphics.
- 66 **Non-line-of-sight Imaging**, D. Faccio, A. Velten, G. Wetzstein, 2020, Nature Review Physics.
- 65 **Cortical Observation by Synchronous Multifocal Optical Sampling Reveals Widespread Population Encoding of Actions**, I. Kauvar, T. Machado, E. Yuen, J. Kochalka, M. Choi, W. Allen, G. Wetzstein, K. Deisseroth, 2020, Neuron.
- 64 **Optically sensing neural activity without imaging**, G. Wetzstein, I. Kauvar, 2020, Nature Photonics News & Views.
- 63 **Neural Sensors: Optimizing Pixel Exposures for HDR Imaging and Video Compressive Sensing with Programmable Sensors**, J. Martel, L. Muller, S. Carey, P. Dudek, G. Wetzstein, 2020, IEEE Transactions on Pattern Analysis and Machine Intelligence (Proc. ICCP).
- 62 **Factored Occlusion: Single Spatial Light Modulator Occlusion-capable Optical See-through Augmented Reality Display**, B. Krajancich, N. Padmanaban, G. Wetzstein, 2020, IEEE Transactions on Visualization and Computer Graphics (Proc. VR).
- 61 **Learned rotationally symmetric diffractive achromat for full-spectrum computational imaging**, X. Dun, H. Ikoma, G. Wetzstein, Z. Wang, X. Cheng, Y. Peng, 2020, OSA Optica.
- 60 **SPADnet: deep RGB-SPAD sensor fusion assisted by monocular depth estimation**, Z. Sun, D. Lindell, O. Solgaard, G. Wetzstein, 2020, OSA Optics Express.
- 59 **Autofocals: Evaluating Gaze-contingent Eyeglasses for Presbyopes**, N. Padmanaban, R. Konrad, G. Wetzstein, 2019, Science Advances.
- 58 **Wave-based Non-line-of-sight Imaging using Fast fk-Migration**, D. Lindell, G. Wetzstein, M. O'Toole, 2019, ACM Transactions on Graphics (SIGGRAPH).
- 57 **Non-line-of-sight Imaging with Partial Occluders and Surface Normals**, F. Heide, M. O'Toole, K. Zang, D. Lindell, S. Diamond, G. Wetzstein, 2019, ACM Transactions on Graphics.
- 56 **Holographic Near-Eye Displays Based on Overlap-Add Stereograms**, N. Padmanaban, Y. Peng, G. Wetzstein, 2019, ACM Transactions on Graphics (SIGGRAPH Asia).
- 55 **Learned Large Field-of-View Imaging With Thin-Plate Optics**, Y. Peng, Q. Sun, X. Dun, G. Wetzstein, W. Heidrich, F. Heide, 2019, ACM Transactions on Graphics (SIGGRAPH Asia).
- 54 **Panoramic single-aperture multi-sensor light field camera**, G. Schuster, D. Dansereau, G. Wetzstein, J. Ford, 2019, OSA Optics Express.
- 53 **Varifocal Occlusion-Capable Optical See-through Augmented Reality Display based on Focus-tunable Optics**, K. Rathinavel, G. Wetzstein, H. Fuchs, 2019, IEEE TVCG (Proc. ISMAR).
- 52 **A light-field metasurface for high-resolution single-particle tracking**, A. Holsteen, D. Lin, I. Kauvar, G. Wetzstein, M. Brongersma, 2019, Nano Letters.
- 51 **Confocal Non-line-of-sight Imaging based on the Light-cone Transform**, M. O'Toole, D. Lindell, G. Wetzstein, 2018, Nature.

- 50 **Hybrid optical-electronic convolutional neural networks with optimized diffractive optics for image classification**, *J. Chang, V. Sitzmann, X. Dun, W. Heidrich, G. Wetzstein*, 2018, Scientific Reports.
- 49 **Sub-picosecond photon-efficient 3D imaging using single-photon sensors**, *F. Heide, S. Diamond, D. B. Lindell, G. Wetzstein*, 2018, Scientific Reports.
- 48 **A convex 3D deconvolution algorithm for low photon count fluorescence imaging**, *H. Ikoma, M. Broxton, T. Kudo, G. Wetzstein*, 2018, Scientific Reports.
- 47 **Electron Ghost imaging**, *S. Li, F. Cropp, K. Kabra, T.J. Lane, G. Wetzstein, P. Musumeci, D. Ratner*, 2018, Physical review letters.
- 46 **Single-Photon 3D Imaging with Deep Sensor Fusion**, *D. Lindell, M. O'Toole, G. Wetzstein*, 2018, ACM Transactions on Graphics (SIGGRAPH).
- 45 **End-to-end Optimization of Optics and Image Processing for Achromatic Extended Depth of Field and Super-resolution Imaging**, *V. Sitzmann*, S. Diamond*, Y. Peng*, X. Dun, S. Boyd, W. Heidrich, F. Heide, G. Wetzstein*, 2018, ACM Transactions on Graphics (SIGGRAPH).
- 44 **Time-multiplexed light field synthesis via factored Wigner distribution function**, *S. Hamann, L. Shi, O. Solgaard, G. Wetzstein*, 2018, Optics Letters 43 (3).
- 43 **Convolutional Sparse Coding for RGB+NIR Imaging**, *X. Hu, F. Heide, Q. Dai, G. Wetzstein*, 2018, IEEE Transactions on Image Processing 27 (4).
- 42 **Saliency in VR: How do people explore virtual environments?**, *V. Sitzmann, A. Serrano, A. Pavel, M. Agrawala, D. Gutierrez, B. Masia, G. Wetzstein*, 2018, IEEE Transactions on Visualization and Computer Graphics (IEEE Virtual Reality).
- 41 **Towards a Machine-learning Approach for Sickness Prediction in Virtual Environments**, *N. Padmanaban, T. Ruban, V. Sitzmann, A. Norcia, G. Wetzstein*, 2018, IEEE Transactions on Visualization and Computer Graphics (IEEE Virtual Reality).
- 40 **Optimizing virtual reality for all users through gaze-contingent and adaptive focus displays**, *N. Padmanaban, R. Konrad, T. Stramer, E. Cooper, G. Wetzstein*, 2017, Proceedings of the National Academy of Sciences (PNAS).
- 39 **Accommodation-invariant Computational Near-eye Displays**, *R. Konrad, N. Padmanaban, K. Molner, E. Cooper, G. Wetzstein*, 2017, ACM Transactions on Graphics (SIGGRAPH).
- 38 **Movie Editing and Cognitive Event Segmentation in Narrative Virtual Reality**, *A. Serrano, V. Sitzmann, J. Ruiz-Borau, G. Wetzstein, D. Gutierrez, B. Masia*, 2017, ACM Transactions on Graphics (SIGGRAPH).
- 37 **SpinVR: Towards Live-Streaming 3D Virtual Reality Video**, *R. Konrad, D. Dansereau, A. Masood, G. Wetzstein*, 2017, ACM Transactions on Graphics (SIGGRAPH Asia).
- 36 **Snapshot Difference Imaging using Time-of-Flight Sensors**, *C. Callenberg, F. Heide, G. Wetzstein, M. Hullin*, 2017, ACM Transactions on Graphics (SIGGRAPH Asia).
- 35 **Convolutional Sparse Coding for RGB+NIR Imaging**, *X. Hu, F. Heide, Q. Dai, G. Wetzstein*, 2017, IEEE Transactions on Image Processing.
- 34 **Single-shot speckle correlation fluorescence microscopy in thick scattering tissue with image reconstruction priors**, *J. Chang, G. Wetzstein*, 2017, Journal of Biophotonics.
- 33 **ProxImaL: Efficient Image Optimization using Proximal Algorithms**, *F. Heide, S. Diamond, M. Niessner, J. Ragan-Kelly, W. Heidrich, G. Wetzstein*, 2016, ACM Transactions on Graphics (SIGGRAPH).

- 32 **Computational Imaging with Multi-camera Time-of-Flight Systems**, *S. Shreshtha, F. Heide, W. Heidrich, G. Wetzstein*, 2016, ACM Transactions on Graphics (SIGGRAPH).
- 31 **Factored Displays: Improving Resolution, Dynamic Range, Color Reproduction, and Light Field Characteristics with Advanced Signal Processing**, *G. Wetzstein, D. Lanman*, 2016, IEEE Signal Processing Magazine.
- 30 **3D Displays**, *M. Banks, D. Hoffman, J. Kim, G. Wetzstein*, 2016, Annual Reviews of Vision Science.
- 29 **Convolutional Sparse Coding for High Dynamic Range Imaging**, *A. Serrano, F. Heide, D. Gutierrez, G. Wetzstein, B. Masia*, 2016, Computer Graphics Forum (Proc. Eurographics).
- 28 **The Light Field Stereoscope: Immersive Computer Graphics via Factored Near-Eye Light Field Display with Focus Cues**, *F.C. Huang, K. Chen, G. Wetzstein*, 2015, ACM Transactions on Graphics (SIGGRAPH).
- 27 **Doppler Time-of-Flight Imaging**, *F. Heide, W. Heidrich, M. Hullin, G. Wetzstein*, 2015, ACM Transactions on Graphics (SIGGRAPH).
- 26 **Adaptive Color Display via Perceptually-driven Factored Spectral Projection**, *I. Kauvar, S. Yang, L. Shi, I. McDowall, G. Wetzstein*, 2015, ACM Transactions on Graphics (SIGGRAPH Asia).
- 25 **Extended Field-of-View and Increased-Signal 3D Holographic Illumination with Time-division Multiplexing**, *S. Yang, W. Allen, I. Kauvar, A. Andalman, N. Young, C. Kim, J. Marshel, G. Wetzstein, K. Deisseroth*, 2015, Optics Express.
- 24 **Wide Field of View Compressive Light Field Display using a Multilayer Architecture and Tracked Viewers**, *R. Chen, A. Maimone, H. Fuchs, R. Raskar, G. Wetzstein*, 2015, Journal of the Society for Information Display.
- 23 **Toward BxDF Display using Multilayer Diffraction**, *G. Ye, S. Jolly, M. Bove, Q. Dai, R. Raskar, G. Wetzstein*, 2014, ACM Transactions on Graphics (SIGGRAPH Asia).
- 22 **Eyeglasses-free Display: Towards Correcting Visual Aberrations with Computational Light Field Displays**, *F.C. Huang, G. Wetzstein, B. Barsky, R. Raskar*, 2014, ACM Transactions on Graphics (SIGGRAPH).
- 21 **A Compressive Light Field Projection System**, *M. Hirsch, G. Wetzstein, R. Raskar*, 2014, ACM Transactions on Graphics (SIGGRAPH).
- 20 **Simultaneous whole-animal 3D-imaging of neuronal activity using light-field microscopy**, *R. Prevedel, Y-G Yoon, M. Hoffmann, N. Pak, G. Wetzstein, S. Kato, T. Schroedel, R. Raskar, M. Zimmer, E. Boyden, A. Vaziri*, 2014, Nature Methods.
- 19 **Computational Schlieren Photography with Light Field Probes**, *G. Wetzstein, W. Heidrich, R. Raskar*, 2014, International Journal of Computer Vision (IJCV), Volume 110, Issue 2, Page 113-127.
- 18 **Ultra-fast Lensless Computational Imaging through 5D Frequency Analysis of Time-resolved Light Transport**, *D. Wu, G. Wetzstein, C. Barsi, T. Willwacher, Q. Dai, R. Raskar*, 2014, International Journal of Computer Vision (IJCV), Volume 110, Issue 2 (2014), Page 128-140 .
- 17 **Compressive multi-mode superresolution display**, *F. Heide, J. Gregson, G. Wetzstein, R. Raskar, W. Heidrich*, 2014, OSA Optics Express.
- 16 **Attenuation-corrected fluorescence spectra unmixing for spectroscopy and microscopy**, *H. Ikoma, B. Heshmat, G. Wetzstein, R. Raskar*, 2014, OSA Optics Express.

- 15 **Dual-coded Compressive Hyper-spectral Imaging**, *X. Ling, G. Wetzstein, Y. Liu, Q. Dai*, 2014, *OSA Optics Letters*, 39 (7).
- 14 **Compressive Light Field Photography using Overcomplete Dictionaries and Optimized Projections**, *K. Marwah, G. Wetzstein, Y. Bando, R. Raskar*, 2013, *ACM Transactions on Graphics (SIGGRAPH)*.
- 13 **Adaptive Image Synthesis for Compressive Displays**, *F. Heide, G. Wetzstein, R. Raskar, W. Heidrich*, 2013, *ACM Transactions on Graphics (SIGGRAPH)*.
- 12 **Focus 3D: Compressive Accommodation Display**, *A. Maimone, G. Wetzstein, D. Lanman, M. Hirsch, R. Raskar, H. Fuchs*, 2013, *ACM Transactions on Graphics*, 32 (5).
- 11 **On Plenoptic Multiplexing and Reconstruction**, *G. Wetzstein, I. Ihrke, W. Heidrich*, 2013, *International Journal of Computer Vision*, Volume 101, Issue 2, Pages 384–400.
- 10 **Display Adaptive 3D Content Remapping**, *B. Masia, G. Wetzstein, C. Aliaga, R. Raskar, D. Gutierrez*, 2013, *Computers & Graphics*, Volume 37, Issue 8, Pages 983–996.
- 9 **A Survey on Computational Displays: Pushing the Boundaries of Optics, Computation, and Perception**, *B. Masia, G. Wetzstein, P. Didyk, D. Gutierrez*, 2013, *Computers & Graphics*, 37, 8.
- 8 **Tensor Displays: Compressive Light Field Display using Multilayer Displays with Directional Backlighting**, *G. Wetzstein, D. Lanman, M. Hirsch, R. Raskar*, 2012, *ACM Transactions on Graphics (SIGGRAPH)*.
- 7 **Compressive Light Field Displays**, *G. Wetzstein, D. Lanman, M. Hirsch, W. Heidrich, R. Raskar*, 2012, *Computer Graphics & Applications*, Volume 32, Number 5.
- 6 **Layered 3D: Tomographic Image Synthesis for Attenuation-based Light Field and High Dynamic Range Displays**, *G. Wetzstein, D. Lanman, W. Heidrich, R. Raskar*, 2011, *ACM Transactions on Graphics (SIGGRAPH)*.
- 5 **Polarization Fields: Dynamic Light Field Display using LCDs**, *D. Lanman, G. Wetzstein, M. Hirsch, W. Heidrich, R. Raskar*, 2011, *ACM Transactions on Graphics (SIGGRAPH Asia)*.
- 4 **Computational Plenoptic Imaging**, *G. Wetzstein, I. Ihrke, D. Lanman, W. Heidrich*, 2011, *Computer Graphics Forum*, Volume 30, Issue 8.
- 3 **Coded Aperture Projection**, *M. Grosse, G. Wetzstein, A. Grundhöfer, O. Bimber*, 2010, *ACM Transactions on Graphics*, 29:3, presented at ACM SIGGRAPH 2010.
- 2 **Optical Image Processing Using Light Modulation Displays**, *Gordon Wetzstein, David Luebke, Wolfgang Heidrich*, 2010, *Computer Graphics Forum*, Volume 29, Issue 6, pages 1934–1944.
- 1 **The Visual Computing of Projector-Camera Systems**, *O. Bimber, D. Iwai, G. Wetzstein, A. Grundhöfer*, 2008, In *Computer Graphics Forum*, Volume 27, Number 8, pp. 2219–2245, 2008.

Conference publications

- 58 **pi-GAN: Periodic Implicit Generative Adversarial Networks for 3D-Aware Image Synthesis**, *E. Chan*, M. Monteiro*, P. Kellnhofer, J. Wu, G. Wetzstein*, 2021, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, (oral).
- 57 **Neural Lumigraph Rendering**, *P. Kellnhofer, L. Jebe, A. Jones, R. Spicer, K. Pulli, G. Wetzstein*, 2021, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, (oral).

- 56 **AutoInt: Automatic Integration for Fast Neural Volume Rendering**, *D. Lindell, J. Martel, G. Wetzstein*, 2021, IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- 55 **Depth from Defocus with Learned Optics for Imaging and Occlusion-aware Depth Estimation**, *H. Ikoma, C. Nguyen, C. Metzler, Y. Peng, G. Wetzstein*, 2021, IEEE International Conference on Computational Photography (ICCP).
- 54 **D-VDAMP: Denoising-based Approximate Message Passing for Compressive MRI**, *C. Metzler, G. Wetzstein*, 2021, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP).
- 53 **SUREmap: Predicting Uncertainty in CNN-based Image Reconstructions using Stein's Unbiased Risk Estimate**, *R. Kitichotkul, C. Metzler, F. Ong, G. Wetzstein*, 2021, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP).
- 52 **Deep S3PR: Simultaneous Source Separation and Phase Retrieval using Deep Generative Models**, *C. Metzler, G. Wetzstein*, 2021, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP).
- 51 **Implicit Neural Representations with Periodic Activation Functions**, *V. Sitzmann**, *J. Martel**, *A. Bergman, D. Lindell, G. Wetzstein*, 2020, NeurIPS, oral.
- 50 **MetaSDF: Meta-Learning Signed Distance Functions**, *V. Sitzmann**, *E. Chan**, *R. Tucker, N. Snavely, G. Wetzstein*, 2020, NeurIPS.
- 49 **Non-line-of-sight Surface Reconstruction Using the Directional Light-cone Transform**, *S. Young, D. Lindell, B. Girod, D. Taubman, G. Wetzstein*, 2020, IEEE Conference on Computer Vision and Pattern Recognition (CVPR, oral).
- 48 **Deep Optics for Single-shot High-dynamic-range Imaging**, *C. Metzler, Hayato Ikoma, Y. Peng, G. Wetzstein*, 2020, IEEE Conference on Computer Vision and Pattern Recognition (CVPR, oral).
- 47 **Disambiguating Monocular Depth Estimation with a Single Transient**, *M. Nishimura, D.B. Lindell, C. Metzler, G. Wetzstein*, 2020, European Conference on Computer Vision (ECCV).
- 46 **State of the Art on Neural Renderings**, *A. Tewari et al.*, 2020, Eurographics, State of the Art Report.
- 45 **Deep Adaptive LiDAR: End-to-end Optimization of Sampling and Depth Completion at Low Sampling Rates**, *A. Bergman, D. Lindell, G. Wetzstein*, 2020, IEEE International Conference on Computational Photography (ICCP).
- 44 **Semantic Implicit Neural Scene Representations with Semi-supervised Training**, *A. Kohli, V. Sitzmann, G. Wetzstein*, 2020, International Conference on 3D Vision (3DV).
- 43 **Scene Representation Networks: Continuous 3D-structure-aware Neural Scene Representations**, *V. Sitzmann, M. Zollhoefer, G. Wetzstein*, 2019, Conference on Neural Information Processing Systems (NeurIPS, oral, Outstanding New Directions Award).
- 42 **Acoustic Non-line-of-sight Imaging**, *D. Lindell, G. Wetzstein, V. Koltun*, 2019, IEEE Conference on Computer Vision and Pattern Recognition (CVPR, oral).
- 41 **Deep Voxels: Learning Persistent 3D Feature Embeddings**, *V. Sitzmann, J. Thies, F. Heide, M. Niessner, G. Wetzstein, M. Zollhoefer*, 2019, IEEE Conference on Computer Vision and Pattern Recognition (CVPR, oral).
- 40 **Deep Optics for Monocular Depth Estimation and 3D Object Detection**, *J. Chang, G. Wetzstein*, 2019, International Conference on Computer Vision (ICCV).

- 39 **LiFF: Light Field Features in Scale and Depth**, *D. Dansereau, B. Girod, G. Wetzstein*, 2019, IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- 38 **Deep End-to-End Time-of-Flight Imaging**, *S. Su, F. Heide, G. Wetzstein, W. Heidrich*, 2018, IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- 37 **Towards Transient Imaging at Interactive Rates with Single-photon Detectors**, *D. Lindell, M. O'Toole, G. Wetzstein*, 2018, IEEE International Conference on Computational Photography (ICCP).
- 36 **Reconstructing Transient Images from Single-Photon Sensors**, *M. O'Toole, F. Heide, D. Lindell, S. Diamond, K. Zang, G. Wetzstein*, 2017, IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- 35 **A Wide-Field-of-View Monocentric Light Field Camera**, *D. Dansereau, G. Schuster, J. Ford, G. Wetzstein*, 2017, IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- 34 **Consensus Convolutional Sparse Coding**, *B. Choudhury, R. Swanson, F. Heide, G. Wetzstein, W. Heidrich*, 2017, International Conference on Computer Vision (ICCV).
- 33 **Aperture interference and the volumetric resolution of light field fluorescence microscopy**, *I. Kauvar, J. Chang, G. Wetzstein*, 2017, IEEE International Conference on Computational Photography (ICCP).
- 32 **Panoramic Monocentric Light Field Camera**, *G. Schuster, I. Agurok, J. Ford, D. Dansereau, G. Wetzstein*, 2017, OSA Optical Design and Fabrication Congress (IODC).
- 31 **Evaluation of Accommodation Response to Monovision for Virtual Reality**, *N. Padmanaban, R. Konrad, G. Wetzstein*, 2017, OSA Imaging and Applied Optics Congress.
- 30 **Novel Optical Configurations for Virtual Reality: Evaluating User Preference and Performance with Focus-tunable and Monovision Near-eye Displays**, *R. Konrad, E. Cooper, G. Wetzstein*, 2016, ACM SIGCHI.
- 29 **Variable Aperture Light Field Photography: Overcoming the Diffraction-limited Spatio-angular Resolution Tradeoff**, *J. Chang, I. Kauvar, X. Hu, G. Wetzstein*, 2016, IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- 28 **Application of light field displays to vision correction and accommodation support**, *F.C. Huang, R. Konrad, G. Wetzstein*, 2016, SPIE Stereoscopic Displays and Applications (Electronic Imaging).
- 27 **Light field, Focus-tunable, and Monovision Near-eye Displays**, *G. Wetzstein*, 2016, Society of Information Displays (SID) Information Display.
- 26 **Fast and Flexible Convolutional Sparse Coding**, *F. Heide, W. Heidrich, G. Wetzstein*, 2015, IEEE Conference on Computer Vision and Pattern Recognition (CVPR, oral).
- 25 **Transparent Object Reconstruction via Coded Transport of Intensity**, *C. Ma, X. Ling, J. Suo, Q. Dai, G. Wetzstein*, 2014, IEEE Conference on Computer Vision and Pattern Recognition (CVPR, oral).
- 24 **A Switchable Light Field Camera Architecture with Angle Sensitive Pixels and Dictionary-based Sparse Coding**, *M. Hirsch, S. Jayasuriya, S. Sivaranakrishnan, A. Wang, A. Molnar, R. Raskar, G. Wetzstein*, 2014, IEEE International Conference on Computational Photography (ICCP), Best Paper Award.
- 23 **Nonlinear Fluorescence Spectra Unmixing**, *H. Ikoma, B. Heshmat, G. Wetzstein, R. Raska*, 2014, OSA Conference on Lasers and Electro-Optics (CLEO).

- 22 **Wide-Field-of-View Compressive Light-Field Display Using a Multilayered Architecture and Viewer Tracking**, *A. Maimone, R. Chen, H. Fuchs, R. Raskar, G. Wetzstein*, 2014, Society for Information Displays (SID) Digest.
- 21 **High-rank Coded Aperture Projection for Extended Depth of Field**, *C. Ma, J. Suo, Q. Dai, R. Raskar, G. Wetzstein*, 2013, IEEE International Conference on Computational Photography (ICCP).
- 20 **Coded Focal Stack Photography**, *X. Lin, J. Suo, G. Wetzstein, Q. Dai, R. Raskar*, 2013, IEEE International Conference on Computational Photography (ICCP).
- 19 **Subsurface Enhancement through Sparse Representations of Multispectral Direct/Global Decomposition**, *A. Kadambi, H. Ikoma, X. Lin, G. Wetzstein, R. Raskar*, 2013, OSA International Conference on Computational Optical Sensing and Imaging (COSI).
- 18 **Single Lens Off-Chip Cellphone Microscopy**, *A. Arpa, G. Wetzstein, D. Lanman, R. Raskar*, 2012, IEEE Int. Workshop on Projector-Camera Systems (PROCAMS).
- 17 **Real-time Image Generation for Compressive Light Field Displays**, *G. Wetzstein, D. Lanman, M. Hirsch, R. Raskar*, 2012, OSA Int. Symposium on Display Holography.
- 16 **Beyond Parallax Barriers: Applying Formal Optimization Methods to Multi-Layer Automultiscopic Displays**, *D. Lanman, G. Wetzstein, M. Hirsch, W. Heidrich, R. Raskar*, 2012, SPIE Stereoscopic Displays and Applications XXIII.
- 15 **Depth of Field Analysis for Multilayer Automultiscopic Displays**, *D. Lanman, G. Wetzstein, M. Hirsch, R. Raskar*, 2012, OSA Int. Symposium on Display Holography.
- 14 **Construction and Calibration of LCD-based Multi-Layer Light Field Displays**, *M. Hirsch, D. Lanman, G. Wetzstein, R. Raskar*, 2012, OSA Int. Symposium on Display Holography.
- 13 **Refractive Shape from Light Field Distortion**, *G. Wetzstein, D. Roodnick, W. Heidrich, R. Raskar*, 2011, IEEE International Conference on Computer Vision (ICCV).
- 12 **Hand-Held Schlieren Photography with Light Field Probes**, *G. Wetzstein, R. Raskar, W. Heidrich*, 2011, IEEE International Conference on Computational Photography (ICCP), Best Paper Award.
- 11 **State of the Art in Computational Plenoptic Imaging**, *G. Wetzstein, I. Ihrke, D. Lanman, W. Heidrich*, 2011, Eurographics State of the Art Report.
- 10 **Sensor Saturation in Fourier Multiplexed Imaging**, *G. Wetzstein, I. Ihrke, W. Heidrich*, 2010, IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
- 9 **A Theory of Plenoptic Multiplexing**, *I. Ihrke, G. Wetzstein, W. Heidrich*, 2010, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), with oral presentation.
- 8 **Radiometric Compensation through Inverse Light Transport**, *G. Wetzstein, O. Bimber*, 2007, In Proceedings of Pacific Graphics.
- 7 **The Visual Computing of Projector-Camera Systems**, *O. Bimber, D. Iwai, G. Wetzstein, A. Grundhöfer*, 2007, Eurographics State of the Art Report.
- 6 **Enabling View-Dependent Stereoscopic Projection in Real Environments**, *O. Bimber, G. Wetzstein, A. Emmerling, C. Nitschke*, 2005, IEEE/ACM International Symposium on Mixed and Augmented Reality (ISMAR).
- 5 **Interacting with Augmented Holograms**, *O. Bimber, T. Zeidler, A. Grundhöfer, G. Wetzstein, M. Möhring, S. Knödel, U. Hahne*, 2005, SPIE Conference on Practical Holography XIX: Materials and Applications.

- 4 **Real-Time Simulation of Elastic Latex Hand Puppets**, C.A. Wüthrich, J. Augusto, S. Banisch, G. Wetzstein, P. Musialski, T. Hoffmann, 2005, International Conferences in Central Europe on Computer Graphics, Visualization and Computer Vision (WSCG).
- 3 **The Interactive Aquarium: Game-Based Interfaces and Wireless Technology for Future-Generation Edutainment**, P. Stephenson, J. Jungclaus, P. Branco, P. Horvatic, G. Wetzstein, L.M. Encarnaca, 2005, TESI Conference: Training, Education & Simulation International.
- 2 **Towards a Workflow and Interaction Framework for Virtual Acquaria**, G. Wetzstein, P. Stephenson, 2004, IEEE VR Workshop: VR for Public Consumption.
- 1 **Consistent Illumination within Optical See-Through Augmented Environments**, O. Bimber, A. Grundhöfer, G. Wetzstein, S. Knödel, 2003, IEEE/ACM International Symposium on Mixed and Augmented Reality (ISMAR).

Book Chapters

- 3 **State of the Art in Perceptual VR Displays**, G. Wetzstein, A. Patney, Q. Sun, 2020, Real VR-Immersive Digital Reality (book chapter).
- 2 **Capture, Reconstruction, and Representation of the Visual Real World for Virtual Reality**, 2020, C. Richardt, J. Tompkin, G. Wetzstein, Real VR-Immersive Digital Reality (book chapter).
- 1 **Augmented and Virtual Reality**, G. Wetzstein, 2020, Nano-Chips 2030 (book chapter).

Non-refereed Publications

- 4 **Unrolled Optimization with Deep Priors**, S. Diamond, V. Sitzmann, F. Heide, G. Wetzstein, 2017, arXiv:1705.08041.
- 3 **Gaze-contingent Adaptive Focus Near-eye Displays**, N. Padmanaban, R. Konrad, E. Cooper, G. Wetzstein, 2017, SID Display Week (invited paper).
- 2 **On the Duality of Compressive Light Field Imaging and Display**, G. Wetzstein, 2015, Society of Information Displays (SID) Display Week (invited paper).
- 1 **Why People Should Care About Light Field Displays**, G. Wetzstein, 2015, Society of Information Displays (SID) Information Display (invited paper).

Theses

Doctoral Thesis.

title *Computational Plenoptic Image Acquisition and Display*
 supervisor Wolfgang Heidrich, University of British Columbia
 award Alain Fournier Ph.D. Dissertation Annual Award 2011

Diplom Thesis.

title *Radiometric Compensation of Global Illumination Effects with Projector-Camera Systems*
 supervisor Oliver Bimber, Bauhaus University Weimar
 summa cum laude

Public Demonstrations

- 2020 **Neural Holography**, Y. Peng, S. Choi, N. Padmanaban, J. Kim, G. Wetzstein, 2020, ACM SIGGRAPH Emerging Technologies.

- 2018 **Autofocals: gaze-contingent eyeglasses for presbyopes**, *N. Padmanaban, R. Konrad, G. Wetzstein*, 2018, ACM SIGGRAPH Emerging Technologies.
- Real-time non-line-of-sight imaging**, *M. O'Toole, D. Lindell, G. Wetzstein*, 2018, ACM SIGGRAPH Emerging Technologies.
- Confocal Non-line-of-sight Imaging**, *M. O'Toole, D. Lindell, G. Wetzstein*, 2018, ACM SIGGRAPH Emerging Technologies.
- 2016 **Computational Focus-tunable Near-eye Displays**, *R. Konrad, N. Padmanaban, E. Cooper, G. Wetzstein*, 2016, ACM SIGGRAPH Emerging Technologies.
- Light Field and Focus-tunable Near-eye Displays**, *R. Konrad, F. Huang, G. Wetzstein*, 2016, IEEE Int. Conference on Computational Photography.
- 2015 **Doppler Time-of-Flight Imaging**, *F. Heide, M. Hullin, W. Heidrich, G. Wetzstein*, 2015, ACM SIGGRAPH Emerging Technologies.
- The Light Field Stereoscope**, *F. Huang, D. Luebke, G. Wetzstein*, 2015, ACM SIGGRAPH Emerging Technologies.
- 2014 **A Compressive Light Field Projection System**, *M. Hirsch, G. Wetzstein, R. Raskar*, 2014, ACM SIGGRAPH Emerging Technologies.
- 2013 **Tensor Displays**, *M. Hirsch, D. Lanman, G. Wetzstein, R. Raskar*, 2013, IEEE Int. Conference on Computational Photography.
- 2012 **Tensor Displays**, *M. Hirsch, D. Lanman, G. Wetzstein, R. Raskar*, 2012, ACM SIGGRAPH Emerging Technologies.
- 2005 **View-dependent Stereoscopic Projection onto Everyday Surfaces**, *O. Bimber, G. Wetzstein, A. Emmerling, C. Nitschke*, 2015, ACM SIGGRAPH Emerging Technologies.

Keynotes and Invited Talks

- 2020 **Invited Talk**, *Towards Neural Imaging & Signal Processing*, IEEE Computational Imaging Webinar Series: SPACE, 03/2021.
- 2020 **Invited Talk**, *Towards Neural Imaging & Signal Processing*, IBM, 03/2021.
- 2020 **Invited Talk**, *Towards Neural Imaging & Signal Processing*, UC Riverside, Department of Electrical and Computer Engineering Seminar Series, 02/2021.
- 2020 **Invited Talk**, *Computational Near-eye Displays and Eyeglasses*, OSA Frontiers in Optics Conference (FiO), 09/2020.
- 2020 **Invited Talk**, *Computational Eyeglasses and Near-eye Displays with Focus Cues*, Bay Area Vision Research Day Conference (BAVRD), 09/2020.
- 2020 **Keynote**, *Towards Neural Imaging and Display*, Computational Visual Media Conference (CVM), 08/2020.
- 2020 **Invited Talk**, *Recent Advances in Light Field and Holographic Near-eye Displays*, International Meeting on Information Displays (IMID), 08/2020.
- 2020 **Keynote**, *Recent Advances in Computational Imaging*, CVPR Workshop on Computational Cameras and Displays (CCD), 06/2020.
- 2020 **Invited Talk**, *Holographic and Near-eye Light Field Displays*, OSA Imaging and Applied Optics Congress, 06/2020.
- 2020 **Invited Talk**, *Computational Single-photon Imaging*, Northwestern University, Computer Science Department, 06/2020.

- 2020 **Invited Talk**, *Efficient non-line-of-sight imaging with computational single-photon imaging*, SPIE Defense + Commercial Sensing, 04/2020.
- 2020 **Invited Talk**, *Computational Near-eye Displays with Focus Cues*, University of North Carolina (UNC), Computer Science Department Seminar, 02/2020.
- 2020 **Invited Talk**, *Computational Single-photon Imaging*, University of North Carolina (UNC), Applied Physical Sciences Department Seminar, 02/2020.
- 2020 **Keynote**, *Computational Imaging at Stanford*, Google Computational Imaging Workshop, 02/2020.
- 2020 **Invited Talk**, *Computational Near-eye Displays and Electronic Eyewear with Focus Cues*, SPIE AR/VR/MR Conference, 02/2020.
- 2020 **Invited Talk**, *Computational Near-eye Displays with Focus Cues*, Society for Information Displays (SID) LA Symposium, 02/2020.
- 2019 **Invited Talk**, *Computational Single-photon Imaging*, Max-Planck-Institute for Informatics, 06/2018.
- 2019 **Invited Talk**, *Computational Single-photon Imaging*, IST Austria - Institute of Science and Technology, 06/2018.
- 2019 **Invited Talk**, *Computational Single-photon Imaging*, Army Research Office – ECASE Symposium, 04/2018.
- 2019 **Invited Talk**, *The Future of Head Mounted Display*, IEEE VR Conference, 03/2018.
- 2018 **Invited Talks**, *Computational Single-photon Imaging*, Gordon Research Conference (GRC) on Imaging Science 06/2018, Waymo 04/2018, International SPAD Sensor Workshop (ISSW) 02/2018, EPFL 02/2018, ETH 02/2018.
- 2018 **Invited Talk (department seminar)**, *Computational Near-eye Displays with Focus Cues*, University of Washington, 06/2018.
- 2018 **Invited Talk**, *The Deep Computational Camera*, Corning, 09/2018.
- 2017 **Invited Talk**, *Computational Near-eye Displays*, Rice University, 11/2017.
- 2017 **IS&T International Symposium on Electronic Imaging (Plenary talk)**, *VR2.0: Making Virtual Reality Better Than Reality?*, 01/2017.
- 2017 **Marvin Minsky Memorial Lecture on Imaging Science, MIT Media Lab (Keynote)**, *Computational Near-eye Displays*, 05/2017.
- 2017 **Augmented Human Conference (Keynote)**, *Computational Near-eye Displays*, 02/2017.
- 2017 **OSA Computational Optical Sensing and Imaging Conference (Invited talk)**, *Computational Near-eye Displays*, 06/2017.
- 2017 **ACM SIGGRAPH Conference (Course)**, *Build Your Own VR System: An Introduction to VR Displays and Cameras for Hobbyists and Educators*, 08/2017.
- 2017 **ACM SIGGRAPH Conference (Course)**, *Applications of Visual Perception to Virtual Reality Rendering*, 08/2017.
- 2017 **OSA Small Eyes & Smart Minds Incubator (Invited talk)**, *Computational Cameras and Displays*, 10/2017.
- 2016 **National Academy of Engineering, Frontiers of Engineering (Invited Talk)**, *Engineering the Future of Computational Near-eye Displays*, 09/2016.
- 2016 **CVPR, Workshop on Computational Cameras and Displays (Keynote)**, *Computational Near-eye Displays*, 06/2016.

- 2016 **Computational Imaging at the Diffraction Limit (Invited Talk)**, *King Abdullah University of Science and Technology (KAUST)*, 03/2016.
- 2016 **Invited Talks**, *Computational Near-eye Displays*, Apple, Intel, Huawei, Meta, 01–03/2016.
- 2015 **Invited Talks**, *Emerging Trends and Applications in Light Field Displays*, OSA Conference on Computational Optical Sensing and Imaging (COSI), IEEE Photonics Society (Bay Area), Google X, Apple, Hewlett-Packard, Stanford Media X Symposium, Stanford SCIEN Lecture Series, Brown Institute Lunch Talk, 01 – 05/2015.
- 2015 **Computational Displays (Invited Talk)**, *King Abdulla University of Science and Technology (KAUST)*, 03/2015.
- 2014 **European Conference on Computer Vision (ECCV), Workshop on Light Fields (Keynote)**, *Crafting Light by Hacking Pixels*, 07/2014.
- 2014 **OSA Computational Optical Sensing and Imaging (Invited Talk)**, *Compressive Light Field Displays*, 06/2014.
- 2014 **SPIE Stereoscopic Displays and Applications (Keynote)**, *A New Area in Computational Displays*, 01/2014.
- 2014 **Photonik Kongress of the German Research Council (Invited Talk)**, *Open Hardware and Emerging Computational Imaging Systems*, 01/2014.
- 2014 **Stanford University (Invited Talk)**, *Compressive Imaging and Display Systems*, 04/2014.
- 2014 **Carnegie Mellon University (Invited Talk)**, *Compressive Imaging and Display Systems*, 03/2014.
- 2014 **UC San Diego (Invited Talk)**, *Compressive Imaging and Display Systems*, 03/2014.
- 2014 **Rochester Institute of Technology (Invited Talk)**, *Compressive Imaging and Display Systems*, 03/2014.
- 2014 **University of Waterloo (Invited Talk)**, *Compressive Imaging and Display Systems*, 02/2014.
- 2014 **University of Rochester (Invited Talk)**, *Compressive Imaging and Display Systems*, 02/2014.
- 2014 **Rutgers University (Invited Talk)**, *Compressive Imaging and Display Systems*, 02/2014.
- 2014 **Inria Sophia-Antipolis (Invited Talk)**, *Compressive Imaging and Display Systems*, 01/2014.
- 2014 **ACM SIGGRAPH (Course)**, *Computational Cameras and Displays*, 08/2014.
- 2013 **Invited Talks**, *Compressive Cameras and Displays*, NEC Corporation, Olympus, Fujitsu, Toshiba Corporation, Loftworks, Keio University, Kozo Keikaku Engineering, Denso IT (Tokyo and Yokohama, Japan), 06/2013.
- 2013 **US Patent and Trademark Office (Invited Talk)**, *An Overview of Computational Imaging Research at MIT*, May 2013.
- 2013 **IEEE International Conference on Computational Photography (Invited Talk)**, *Compressive Light Field Displays*, 04/2013.
- 2013 **CUSO Winter School on Computational Photography and Display (Keynote)**, *Compressive Light Field Displays*, 01/2013.
- 2012 **ACM SIGGRAPH (Course)**, *Computational Plenoptic Imaging*, 07/2012.
- 2012 **ACM SIGGRAPH (Course)**, *Computational Displays*, 07/2012.

- 2012 **Invited Talks**, *Compressive Light Field Displays*, 07 – 09/2012, Autodesk Research (Toronto, Canada), Microsoft Research Asia (Beijing, China), Tsinghua University (Beijing, China), HP Research Labs (USA), Telecom ParisTech (Paris, France), Max-Planck-Institut für Informatik (Saarbrücken, Germany), Eberhard Karls Universität (Tübingen, Germany), Disney Research (Zurich, Switzerland).
- 2012 **University of Toronto (Invited Talk)**, *Computational Multilayer Light Field Displays*, 02/2012.
- 2012 **Rochester Institute of Technology (Invited Talk)**, *Computational Multilayer Light Field Displays*, 02/2012.
- 2010 **Max-Planck-Institut für Informatik (Invited Talk)**, *Computational Light Modulation for Image Acquisition and Display*, 2010.
- 2006 **University of Otago (Invited Talk)**, *Reverse Radiosity: Compensating Indirect Scattering for Immersive and Semi-Immersive Projection Displays*, 2006.
- 2005 **Hitlab New Zealand (Invited Talk)**, *Enabling View-Dependent Stereoscopic Projection in Real Environments*, 2005.

Teaching

- 2020/2021 **E367/CS448I Computational Imaging and Display**, *Winter Quarter*, Stanford University (instructor).
EE267 Virtual Reality, *Spring Quarter*, Stanford University (instructor).
EE292E Image Systems Engineering Seminar, *Autumn, Winter, and Spring Quarter*, Stanford University (co-instructor).
- 2019/2020 **E367/CS448I Computational Imaging and Display**, *Winter Quarter*, Stanford University (instructor).
EE267 Virtual Reality, *Spring Quarter*, Stanford University (instructor).
EE292E Image Systems Engineering Seminar, *Autumn, Winter, and Spring Quarter*, Stanford University (co-instructor).
- 2018/2019 **E367/CS448I Computational Imaging and Display**, *Winter Quarter*, Stanford University (instructor).
EE267 Virtual Reality, *Spring Quarter*, Stanford University (instructor).
EE292E Image Systems Engineering Seminar, *Autumn, Winter, and Spring Quarter*, Stanford University (co-instructor).
- 2017/2018 **E367/CS448I Computational Imaging and Display**, *Winter Quarter*, Stanford University (instructor).
EE267 Virtual Reality, *Spring Quarter*, Stanford University (instructor).
EE292E Image Systems Engineering Seminar, *Autumn, Winter, and Spring Quarter*, Stanford University (co-instructor).
Build Your Own VR System: An Introduction to VR Displays and Cameras for Hobbyists and Educators, ACM SIGGRAPH 2017 course (organizer and co-instructor).
Applications of Visual Perception to Virtual Reality Rendering, ACM SIGGRAPH 2017 course (co-instructor).
- 2016/2017 **E367/CS448I Computational Imaging and Display**, *Winter Quarter*, Stanford University (instructor).

- EE267 Virtual Reality**, *Spring Quarter*, Stanford University (instructor).
- EE368/CS232 Digital Image Processing**, *Autumn Quarter*, Stanford University (instructor).
- 2015/2016 **EE368/CS232 Digital Image Processing**, *Autumn Quarter*, Stanford University (instructor).
- EE367/CS448I Computational Imaging and Display**, *Winter Quarter*, Stanford University (instructor).
- EE368/CS232 Digital Image Processing**, *Spring Quarter*, Stanford University (instructor).
- Designing Civic Technologies with Virtual Reality**, *Autumn Quarter*, Stanford University, d.school (co-instructor).
- 2014/2015 **MAS.132/MAS.532 Mathematical Methods in Imaging**, MIT Media Lab (co-instructor).
- Computational Cameras and Displays**, ACM SIGGRAPH course (co-instructor).
- 2013 **Compressive Computational Photography and Display**, Industry R&D Seminar, Tokyo, Japan (instructor).
- Mathematical Methods in Imaging (MAS.132/532)**, MIT Media Lab (co-instructor).
- Computational Displays**, Eurographics 2013 tutorial (organizer and co-instructor).
- 2012 **Computational Cameras and Photography (MAS.131/531)**, MIT Media Lab (co-instructor).
- Future of Imaging (MAS.132/532)**, MIT Media Lab (co-instructor).
- Computational Plenoptic Imaging**, ACM SIGGRAPH 2012 course (organizer and co-instructor).
- Computational Displays**, ACM SIGGRAPH 2012 course (organizer and co-instructor).
- 2011 **Computational Plenoptic Imaging**, Eurographics state of the art report (organizer and co-instructor).
- Introduction to Programmable GPUs**, *Introduction to Computer Graphics (UBC CS 314)*, University of British Columbia, guest lecture (02/11).
- 2009 **Introduction to Programmable GPUs**, *Introduction to Computer Graphics (UBC CS 314)*, University of British Columbia, guest lecture (03/09).
- 2007 **Teaching Assistant**, *Introduction to Computer Graphics (CS 314)*, University of British Columbia (01–04/07).
- 2006 **Teaching Assistant**, *Models of Computation (CS 121)*, University of British Columbia (09–12/06).
- 2002 **Teaching Assistant**, *Computer Graphics Lab*, Bauhaus-Universität Weimar, Germany (10/01–01/02).

Service

- Assoc. Editor** ACM Transactions on Graphics, since 2020.
- Assoc. Editor** Scientific Reports, Nature Publishing Group, since 2015.
- Assoc. Editor** OSA Optics Express, since 2019.
- Assoc. Editor** IEEE Transactions on Computational Imaging, 2016–2020.
- Program Co-Chair** OSA Imaging and Applied Optics Congress, Computational Optical Sensing and Imaging Conference 2021.
- Area Chair** Int. Conference on Computer Vision (CVPR) 2021.

Workshop Co-Chair ECCV Workshop on Learning 3D Representations for Shape and Appearance 2020.

Co-Chair Banff International Research Station, Workshop on Computational Light Transport 2019.

Program Co-Chair Pacific Graphics 2019.

Program Co-Chair Int. Conference on Computational Photography (ICCP) 2017.

Program Chair ACM SIGGRAPH Courses 2016.

Industry Chair Int. Conference on Computational Photography (ICCP) 2016.

Area Chair Int. Conference on Computer Vision and Pattern Recognition (CVPR) 2018.

Program Chair CVPR Int. Workshop on Computational Cameras and Displays (PROCAMS/CCD) 2013.

Program Chair CVPR Int. Workshop on Computational Cameras and Displays (PROCAMS/CCD) 2012.

Program ACM SIGGRAPH, Technical Papers PC 2014, 2015, 2017, 2018, Col Coordinator 2019, 2020, 2021.

Committee ACM SIGGRAPH Asia, Technical Papers, *2015, 2020*.
 ACM SIGGRAPH, General Submissions, *2012, 2015, 2016*.
 Int. Conference on Computer Vision and Pattern Recognition (CVPR), *2012 – 2020*.
 Int. Conference on Computational Photography (ICCP), *2013 – 2020*.
 Int. Conference on Computer Vision (ICCV), *2011*.
 OSA Computational Optical Sensing and Imaging (COSI), *2015 – 2020*.
 CVPR Int. Workshop on Computational Cameras and Displays (CCD), *2012–2020*.
 SPIE DCS Computational Imaging Conference, *2016*.
 ACM SIGGRAPH Asia, Emerging Technologies, *2014*.
 ACM SIGGRAPH Asia, Workshops, *2014*.
 ACCV Int. Workshop on Computational Photography and Low-Level Vision, *2012*.
 Eurographics, Technical Papers, *2015*.
 Eurographics, Short Papers, *2014*.
 Eurographics Symposium on Rendering, *2014*.
 Pacific Graphics 2014.
 ACM SIBGRAPI, *2014*.
 IEEE Int. Symposium on Mixed and Augmented Reality (ISMAR), *2010*.
 IEEE Int. Workshop on Projector-Camera Systems (PROCAMS), *2007*.

Senior Member IEEE.

Member ACM, SPIE, OSA, IEEE Special Interest Group on Computational Imaging.

Grant Reviewer National Science Foundation, *2016, 2017, 2018, 2020*.
 Natural Sciences and Engineering Research Council of Canada (NSERC), *2017, 2018*.

University Faculty Co-director, *Stanford Center for Image Systems Engineering (SCIEN)*, since 2017.

- Service** **Faculty Co-director**, *Stanford Center for Professional Development (SCPD)*, Visual Computing Graduate Certificate, since 2017.
- Faculty Search Committee**, *Stanford Electrical Engineering Broad Area Search*, 2017.
- Faculty Search Committee**, *Stanford SoE Interdepartmental Robotics Search*, 2015.
- Curriculum Committee**, *Stanford Electrical Engineering Department*, since 2016.
- Website Committee**, *Stanford Electrical Engineering Department*, since 2014.

Patents

- 2017 **Accommodation-invariant Computational Near-eye Display**, *G. Wetzstein, R. Konrad*, 2017, US Patent Application 2017/0236255 A1.
- Light-field Imaging Using a Gradient Metasurface Optical Element**, *D. Lin, M. Brongersma, P. Kik, G. Wetzstein*, 2017, US Patent Application 2017/0146806 A1.
- Doppler Time-of-Flight Imaging**, *W. Heidrich, F. Heide, G. Wetzstein, M. Hullin*, 2017, WO Patent Application 2017/025885 A1.
- 2016 **Vision correcting display with aberration compensation using inverse blurring and a light field display**, *F. Huang, G. Wetzstein, B. Barsky, R. Raskar*, 2016, US Patent Application 2016/0042501 A1.
- 2015 **Methods and Apparatus for Visual Display**, *F. Heide, G. Wetzstein, J. Gregson, R. Raskar, W. Heidrich*, 2015, US Patent Application 2015/0035880 A1.
- Digital projector and method for increasing a depth of focus of a projected image**, *G. Wetzstein, O. Bimber, M. Grosse, A. Grundhoefer*, 2015, DE Patent 102009035870 B4.
- Adaptive Color Display via Perceptually-driven Factored Spectral Projection**, *I. Kauvar, S. Yang, G. Wetzstein*, 2015, US Provisional Patent 62/203217.
- 2014 **Tensor Displays**, *G. Wetzstein, D. Lanman, M. Hirsch, R. Raskar*, 2012, US Patent 8848006 B2.
- Polarization fields for dynamic light field display**, *D. Lanman, G. Wetzstein, W. Heidrich, R. Raskar*, 2014, US Patent 8651678 B2.
- Methods and Apparatus for Light Field Projection**, *M. Hirsch, G. Wetzstein, R. Raskar, V. Lee*, 2014, US Patent Application 2014/0300869 A1.
- Methods and Apparatus for Light Field Photography**, *K. Marwah, G. Wetzstein, R. Raskar*, 2014, US Patent Application 2014/0240532 A1.
- 2010 **Multiplexed Imaging**, *G. Wetzstein, I. Ihrke, W. Heidrich*, 2010, US Patent 2011/0267482 A1 (licensed by Dolby Laboratories).