Gordon Wetzstein

Curriculum Vitae

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✉ *gordon.wetzstein@stanford.edu*
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Education and Experience

since 09/21 **Associate Professor**, *Stanford University, EE & CS (by courtesy)*, Stanford, CA.

since 10/24 **Co-founder**, *Stealth Startup*.

01/20 – 06/24 **Co-founder & Chief Scientist**, *Zinn Labs (acquired by Sesame AI)*.

11/17 – 05/22 **Co-founder**, *Raxium (acquired by Google)*.

09/14 – 09/21 **Assistant Professor**, *Stanford University, EE & CS (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

2025 **Fellow of the IEEE**.

2024 **IEEE VGTC Virtual Reality Technical Achievement Award**.

2024 **IEEE VGTC Virtual Reality Academy**.

2024 **Society of Information Displays (SID) - Otto Schade Prize**.

2023 **Fellow of Optica (formerly OSA)**.

2023 **IEEE Signal Processing Society Distinguished Lecturer**.

2023 **IS&T Raymond C. Bowman Award**.

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

2024 **Best Paper, Honorable Mention**, *Zhang et al., GazeFusion: Saliency-guided Image Generation*, ACM Symposium on Applied Perception (SAP), 2024.

2023 **Best Paper, Honorable Mention**, *Krajancich et al., Towards Attention-aware Foveated Rendering*, ACM SIGGRAPH, 2023.

2023 **Frontiers of Science Award**, *Peng et al., Neural Holography with Camera-in-the-loop Training*, International Congress of Basic Science, 2023.

2022 **Best Journal Paper**, *Ebner et al., Video See-Through Mixed Reality with Focus Cues*, IEEE Conference on Virtual Reality (VR), 2022.

2022 **Best Journal Paper**, *Martin et al., ScanGAN360: A Generative Model of Realistic Scanpaths for 360° Images*, IEEE Conference on Virtual Reality (VR), 2022.

2022 **Best Demo Award**, *So et al., Modulo Camera on a Focal Plane Sensor Processor*, IEEE International Conference on Computational Photography (ICCP), 2022.

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

Gun-Yeal Lee, *Stanford (EE)*, 2022–.
Suyeon Choi, *Stanford (EE)*, 2024–.
Tong Wu, *Stanford (CS/EE)*, 2025–.
Seung-Woo Nam, *Stanford (EE)*, 2025–.
Ilker Oguz, *Stanford (EE)*, 2025–.

PhD

Eric Ryan Chan, *Stanford (CS)*, 2021–, NVIDIA Graduate Fellowship.
Boyang Deng, *Stanford (CS)*, 2022–, Meta Research PhD Fellowship.
Brian Chao, *Stanford (EE)*, 2022–, Stanford SGF, NSF GRFP.
Ryan Po, *Stanford (EE)*, 2022–, Stanford SGF.
Jay Shenoy, *Stanford (CS)*, 2022–, NSF GRFP.
Zhengfei Kuang, *Stanford (CS)*, 2022–.
Yang Zhen, *Stanford (CS)*, 2022–.
co-advised with Leo Guibas
Shengqu Cai, *Stanford (CS)*, 2023–.
Hansheng Chen, *Stanford (CS)*, 2023–.
co-advised with Leo Guibas
Jackie Yang, *Stanford (EE)*, 2024–, Stanford SGF, NSF GRFP.
George Nakayama, *Stanford (CS)*, 2025–, NSF GRFP.
co-advised with Leo Guibas
Howard Xiao, *Stanford (CS)*, 2025–, Stanford SGF.

MSc

Sonia Kim, *Stanford (EE)*, 2024–.
Selim Emir Can, *Stanford (EE)*, 2025–.

Alumni

Sara Fridovich-Keil, *Stanford Postdoc (EE)*, 2023–2025.
now Assistant Professor (ECE), Georgia Tech
Guandao Yang, *Stanford Postdoc (CS)*, 2023–2025.
now Assistant Professor (ECE), UT Austin
Yinghao Xu, *Stanford Postdoc (EE)*, 2024–2025.
now incoming Assistant Professor (CS), HKUST
Yifan Wang, *Stanford Postdoc (CS)*, 2022–2024.
now Research Scientist, Adobe Research
Rameen Abdal, *Stanford Postdoc (CS)*, 2023–2024.
now Research Scientist, Snap Research
Jeong Joon "JJ" Park, *Stanford Postdoc (CS)*, 2021–2023.
now Assistant Professor (CS), University of Michigan
Yifan "Evan" Peng, *Stanford Postdoc (EE)*, 2018–2022.
now Assistant Professor (ECE), The University of Hong Kong
Julien Martel, *Stanford Postdoc (EE)*, 2019–2022.
now at Perceptive Sensing

Petr Kellnhofer, *Stanford Visiting Scholar (EE)*, 2019–2021.
now Assistant Professor (CS), TU Delft

Joshua Rapp, *Stanford Postdoc(EE)*, 2020–2021.
now Research Scientist at MERL

Chris Metzler, *Stanford Postdoc (EE)*, 2018–2020, ORISE Fellow.
now Assistant Professor (CS) at U Maryland

Matthew O'Toole, *Stanford Postdoc (EE)*, 2016–2018, Banting Fellow.
now Assistant Professor (CS) at CMU

Felix Heide, *Stanford Postdoc (EE)*, 2016–2018.
now Assistant Professor (CS) at Princeton

Donald Dansereau, *Stanford Postdoc (EE)*, 2016–2018.
now Assistant Professor (ME) at University of Sydney

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

Manu Gopakumar, *Stanford PhD (EE)*, 2020–2025, Stanford SGF.
now at Apple

Qingqing Zhao, *Stanford PhD (EE)*, 2020–2025.
now at Tesla

Axel Levy, *Stanford PhD (EE)*, 2020–2025, *co-advised with Mike Dunne at SLAC.
now at Generate:Biomedicines

Haley So, *Stanford PhD (EE)*, 2021–2025, NSF GRFP.
now at Meta Reality Labs

Suyeon Choi, *Stanford PhD (CS)*, 2020–2024, Meta Research PhD Fellowship.
now incoming Assistant Professor (CS), SNU Korea

Connor Lin, *Stanford PhD (CS)*, 2020–2024, *co-advised with Leo Guibas, Stanford SGF.
now CTO at Apparate AI

Cindy Nguyen, *Stanford PhD (EE)*, 2019–2024, NSF GRFP.
now at Netflix

Brooke Lee Krajancich, *Stanford PhD (EE)*, 2018–2023, Knight-Hennessy Scholar.
now at Apple

Alex William Bergman, *Stanford (EE)*, 2018–2023, Stanford SGF.
now CTO at Dream AI

David Lindell, *Stanford PhD (EE)*, 2016–2022, Stanford SGF.
now Assistant Professor (CS), University of Toronto

Hayato Ikoma, *Stanford PhD (EE)*, 2016–2021.
now at 10× Genomix

Vincent Sitzmann, *Stanford PhD (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.

Journal publications

104 **Synthetic aperture waveguide holography for compact mixed-reality displays with large etendue**, *S. Choi, C. Jang, D. Lanman, G. Wetzstein*, 2025, Nature Photonics.

103 **Scalable 3D reconstruction for X-ray single particle imaging with online machine learning**, *J. Shenoy, A. Levy, K. Ayyer, F. Poitevin, G. Wetzstein*, 2025, Nature Communications.

102 **CryoDRGN-AI: neural ab initio reconstruction of challenging cryo-EM and cryo-ET datasets**, *A. Levy, R. Raghu, J. Feathers, M. Grzadkowski, F. Poitevin, J. Johnston, F. Vallese, O. Clarke, G. Wetzstein, E. Zhong*, 2025, Nature Methods.

101 **Interspatial Attention for Efficient 4D Human Video Generation**, *R. Shao, Y. Xu, Y. Shen, C. Yang, Y. Zheng, C. Chen, Y. Liu, G. Wetzstein*, 2025, ACM Transactions on Graphics (SIGGRAPH).

100 **Gaussian Wave Splatting for Computer-Generated Holography**, *S. Choi*, B. Chao*, J. Yang, M. Gopakumar, G. Wetzstein*, 2025, ACM Transactions on Graphics (SIGGRAPH).

99 **Full-colour 3D holographic augmented-reality displays with metasurface waveguides**, *M. Gopakumar*, G.-Y. Lee*, S. Choi, B. Chao, Y. Peng, J. Kim, G. Wetzstein*, 2024, Nature.

98 **State of the Art on Diffusion Models for Visual Computing**, *R. Po, W. Yifan, V. Golyanik, K. Aberman, J. Barron, A. Bermano, E. Chan, T. Dekel, A. Holynski, A. Kanazawa, K. Liu, L. Liu, B. Mildenhall, M. Niessner, B. Ommer, C. Theobalt, P. Wonka, G. Wetzstein*, 2024, Computer Graphics Forum (Eurographics State-of-the-Art Report).

97 **GazeFusion: Saliency-guided Image Generation**, *Y. Zhang, N. Wu, C. Lin, G. Wetzstein, Q. Sun*, 2024, ACM Transactions on Applied Perception (Symposium on Applied Perception, journal track).

96 **Pose-to-Motion: Cross-Domain Motion Retargeting with Pose Prior**, *Q. Zhao, P. Li, Y. Wang, O. Sorkine-Hornung, G. Wetzstein*, 2024, Computer Graphics Forum (SCA).

95 **Towards Attention-aware Foveated Rendering**, *B. Krajancich, P. Kellnhofer, G. Wetzstein*, 2023, ACM Transactions on Graphics (SIGGRAPH).

94 **High-brightness Holographic Projection**, *B. Chao, M. Gopakumar, S. Choi, G. Wetzstein*, 2023, Optics Letters.

93 **Off-Axis Layered Displays: Hybrid Direct-View/Near-Eye Mixed Reality with Focus Cues**, *C. Ebner, P. Mohr, T. Langlotz, Y. Peng, D. Schmalstieg, G. Wetzstein, D. Kalkofen*, 2023, IEEE Transactions on Visualization and Computer Graphics (Proc. VR).

92 **Advances in Neural Rendering**, *A. Tewari et al.*, 2022, Computer Graphics Forum (Eurographics State-of-the-art Report).

91 **Larger visual changes compress time: The inverted effect of asemantic visual features on interval time perception**, *S. Malpica, B. Masia, L. Herman, G. Wetzstein, D. Eagleman, D. Gutierrez, Z. Bylinskii, Q. Sun*, 2022, PLOS ONE.

90 **Video See-Through Mixed Reality with Focus Cues**, *C. Ebner, S. Mori, P. Mohr, Y. Peng, D. Schmalstieg, G. Wetzstein, D. Kalkofen*, 2022, IEEE TVCG (Proc. VR).

89 **ScanGAN360: A Generative Model of Realistic Scanpaths for 360° Images**, *D. Martin, A. Serrano, A. Bergman, G. Wetzstein, B. Masia*, 2022, IEEE TVCG (Proc. VR).

88 **Towards Retina-Quality VR Video Streaming: 15ms Could Save You 80% of Your Bandwidth**, *L. Hsiao, B. Krajancich, P. Levis, G. Wetzstein, K. Winstein*, 2022, SIGCOMM Computer Communication Review (SIGCOMM CCR).

87 **Speckle-free holography with partially coherent light sources and camera-in-the-loop calibration**, *L. Hsiao, B. Krajancich, P. Levis, G. Wetzstein, K. Winstein*, 2022, SIGCOMM Computer Communication Review (SIGCOMM CCR).

86 **Speckle-free holography with partially coherent light sources and camera-in-the-loop calibration**, *Y. Peng*, S. Choi*, J. Kim, G. Wetzstein*, 2021, Science Advances.

85 **Neural 3D Holography: Learning Accurate Wave Propagation Models for 3D Holographic Virtual and Augmented Reality Displays**, *S. Choi*, M. Gopakumar*, Y. Peng, J. Kim, G. Wetzstein*, 2021, ACM Transactions on Graphics (SIGGRAPH Asia).

84 **Neural 3D Holography: Learning Accurate Wave Propagation Models for 3D Holographic Virtual and Augmented Reality Displays**, *S. Choi*, M. Gopakumar*, Y. Peng, J. Kim, G. Wetzstein*, 2021, ACM Transactions on Graphics (SIGGRAPH Asia).

83 **A Perceptual Model for Eccentricity-dependent Spatio-temporal Flicker Fusion and its Applications to Foveated Graphics**, *B. Krajancich, P. Kellnhofer, G. Wetzstein*, 2021, ACM Transactions on Graphics (SIGGRAPH).

82 **ACORN: Adaptive Coordinate Networks for Neural Scene Representation**, *J. Martel, D. Lindell, C. Lin, E. Chan, M. Monteiro, G. Wetzstein*, 2021, ACM Transactions on Graphics (SIGGRAPH).

81 **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.

80 **Optimizing image quality for holographic near-eye displays with Michelson Holography**, *S. Choi, J. Kim, Y. Peng, G. Wetzstein*, 2021, OSA Optica.

79 **Unfiltered holography: optimizing high diffraction orders without optical filtering for compact holographic displays**, *M. Gopakumar, J. Kim, S. Choi, Y. Peng, G. Wetzstein*, 2021, Optics Letters.

78 **Deep learning multi-shot 3D localization microscopy using hybrid optical-electronic computing**, *H. Ikoma, T. Kudo, Y. Peng, M. Broxton, G. Wetzstein*, 2021, Optics Letters.

77 **Shift-variant color-coded diffractive spectral imaging system**, *H. Arguello, S. Pinilla, Y. Peng, H. Ikoma, J. Bacca, G. Wetzstein*, 2021, Optica.

76 **Holographic pancake optics for thin and lightweight optical see-through augmented reality**, *O. Cakmakci, Y. Qin, P. Bosel, G. Wetzstein*, 2021, Optics Express.

75 **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.

74 **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).

73 **Roadmap on digital holography**, *B. Javidi et al.*, 2021, Optics Express (invited paper).

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. Agelopolous, 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. Schrodel, 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.

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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 Edutainmen**, *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).

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

2024 **Holographic Parallax: 3D Holographic Near-eye Displays with Parallax Cues**, *S. Nam, D. Kim, S. Choi, J. Lee, S. Lee, M. Gopakumar, B. Chao, G. Wetzstein, Y. Jeong*, 2023, ACM SIGGRAPH Emerging Technologies.

2023 **Neural Holographic Near-eye Displays for Virtual Reality**, *S. Choi, M. Gopakumar, B. Chao, G.-Y. Lee, J. Kim, G. Wetzstein*, 2023, ACM SIGGRAPH Emerging Technologies.

2022 **Modulo Camera on a Focal Plane Sensor Processor**, *H. So, J. Martel, P. Dudek, G. Wetzstein*, 2022, Int. Conference on Computational Photography (ICCP).
Best Demo Award!

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

2025 **Invited Talk**, *Long-context and Controllable Video World Models*, CVPR Workshop on Novel View Synthesis and 3D Semantic Understanding, 06/2025.

2025 **Keynote**, *Long-context and Controllable Video World Models*, CVPR Workshop on Real-to-Sim: Bridging the Gap between Neural Rendering and Robot Learning, 06/2025.

2025 **Invited Talk**, *Foundation Models for Digital Humans and Garments*, CVPR Workshop on Visual Modeling Challenges for 2D-3D Virtual Try-On, 06/2025.

2025 **Invited Talk**, *Physics-inspired Vision, Perception, and Display*, CVPR Workshop on Physics-inspired 3D Vision and Imaging, 06/2026.

2025 **Invited Talk**, *Spatial Generative AI*, Electronic Imaging Conference, 02/2025.

2024 **Invited Talk**, *Foundation Models for Solving Challenging Inverse Problems*, Stanford Center for Decoding the Universe Workshop, 10/2024.

2024 **Invited Talk**, *Generating the Metaverse*, Carnegie Mellon University, EE Department Seminar, 10/2024.

2024 **Invited Talk**, *Spatial Generative AI*, University of Pennsylvania, CS Department Colloquium, 09/2024.

2024 **Invited Talk**, *Next-generation Computational Imaging and Display Systems Engineering based on End-to-end Optimization of Physical Structure and Signal Processing*, Samsung Electronics, 09/2024.

2024 **Invited Talk**, *Spatial Generative AI*, Stanford Center for Integrated Facility Engineering (CIFE) Workshop, 09/2024.

2024 **Invited Talk**, *Emerging Technologies for the Metaverse*, Samsung Electronics TechCon, 08/2024.

2024 **Invited Talk**, *Spatial Generative AI*, CVPR Workshop on AI for 3D Generation, 06/2024.

2024 **Invited Talk**, *Spatial Generative AI*, CVPR Workshop on Neural Rendering Intelligence, 06/2024.

2024 **Invited Talk**, *GazeGPT: Augmenting Human Capabilities using Gaze-contingent Contextual AI for Smart Eyewear*, Stanford System X Workshop on AI on the Edge, 06/2024.

2024 **Invited Talk**, *Beyond the Metaverse: Towards Human-centric XR*, Seoul National University (SNU) / Samsung Future Technology Colloquium, 04/2024.

2024 **Keynote**, *A Trip Down the Generative Graphics Pipeline*, Electronic Imaging Congress, Computational Imaging Conference, 01/2024.

2023 **Invited Talk**, *Neural Sensors: AI driven In-Pixel Compute for Compressed Readout Bandwidth*, IEEE/ACM International Conference on Computer-aided Design, 11/2023.

2023 **Invited Talk**, *Beyond the Metaverse - Towards Human-centric XR*, IEEE SPS Distinguished Lecture, IEEE SPS / Eurasip PhD school on Signal Processing, Cagliari, Italy, 09/2023.

2023 **Invited Talk**, *Next-generation Computational Imaging and Display Systems Engineering based on End-to-end Optimization of Physical Structure and Signal Processing*, IEEE SPS Distinguished Lecture, IEEE Signal Processing and Computer Society, North Jersey Chapter, 09/2023.

2023 **Invited Talk**, *A Trip Down the Generative Graphics Pipeline*, Bay Area Computer Vision Day, Stanford, 09/2023.

2023 **Invited Talk**, *A Trip Down the Generative Graphics Pipeline*, Snap Research, 09/2023.

2023 **Invited Talk**, *A Trip Down the Generative Graphics Pipeline*, CVPR Workshop on Generative Models for Computer Vision, 06/2023.

2023 **Plenary Talk**, *A Trip Down the Generative Graphics Pipeline*, Eurographics, 05/2023.

2023 **Distinguished Lecture**, *Beyond the Metaverse - Towards Human-centric XR*, University of Maryland, CS Department, 03/2023.

2023 **Keynote**, *Efficient Neural Scene Representation, Rendering, and Generation*, China3DV Conference, 04/2023.

2023 **Invited Talk**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, SNUG conference, Santa Clara, 04/2023.

2023 **Invited Talk**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, Wyant College of Optical Sciences Colloquium, University of Arizona, 02/2023.

2023 **Invited Talk**, *Efficient Neural Scene Representation, Rendering, and Generation*, IEEE SPS Distinguished Lecture, IEEE Signal Processing Society Chapter, Indian Institute of Technology, Madras, India, 02/2023.

2023 **Invited Talk**, *Efficient Neural Scene Representation, Rendering, and Generation*, IEEE SPS Distinguished Lecture, IEEE Signal Processing Society Student Chapter, Indian Institute of Technology, Kharagpur, West Bengal, India, 02/2023.

2023 **Invited Talk**, *Efficient Neural Scene Representation, Rendering, and Generation*, IEEE SPS Distinguished Lecture, IEEE Signal Processing Society Chapter, Uttar Pradesh, India, 02/2023.

2023 **Invited Talk**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, SPIE Photonics West, AI and Optical Data Sciences Conference, 02/2023.

2023 **Invited Talk**, *Efficient Neural Scene Representation, Rendering, and Generation*, University of Utah, ECE Department Seminar, 01/2023.

2023 **Keynote**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, IS&T Electronic Imaging Congress, Computational Imaging Conference, 01/2023.

2022 **Invited Talk**, *Efficient Neural Scene Representation, Rendering, and Generation*, ECCV Workshop on Advances in Image Manipulation, 10/2022.

2022 **Invited Talk**, *Beyond the Metaverse - Towards Human-centric XR*, Frontiers in Optics Conference (FiO), 09/2022.

2022 **Keynote**, *Efficient Neural Scene Representation, Rendering, and Generation*, Generative AI for Metaverse Symposium at the World AI Conference, 09/2022.

2022 **Invited Talk**, *Efficient Neural Scene Representation, Rendering, and Generation*, Google Computational Imaging Workshop, 08/2022.

2022 **Keynote**, *Beyond the Metaverse - Towards Human-centric XR*, High-performance Graphics Conference, 07/2022.

2022 **Keynote**, *Efficient Neural Scene Representation, Rendering, and Generation*, Eurographics Symposium on Rendering, 07/2022.

2022 **Keynote**, *Eye Tracking Revisited - Applications in Rendering, Displays, Wearable Computing Systems, and Emerging Event-based Eye Tracking*, CVPR International Workshop on Gaze Estimation and Prediction in the Wild, 06/2022.

2022 **Invited Talk**, *Beyond the Metaverse - Towards Human-centric XR*, SID Pacific Northwest Chapter Seminar, 05/2022.

2022 **Invited Talk**, *Efficient Neural Scene Representation, Rendering, and Generation*, TU Munich AI Lecture Series, 04/2022.

2022 **Invited Talk**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, Tongji University, Department Seminar, 04/2022.

2022 **Invited Talk**, *(Some) Emerging Technologies in AR/VR and Wearable Computing*, DARPA ISAT Metaverse Seminar, 02/2022.

2022 **Invited Talk**, *Advances in Holographic Near-eye Displays for AR/VR*, Stanford eWear Symposium, 02/2022.

2021 **Invited Talk**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, Google, Computational Photography Seminar, 11/2021.

2021 **Invited Talk**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, Optica Fronties in Optics, 11/2021.

2021 **Invited Talk**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, Washington University in St. Louis, ECE Department Seminar, 10/2021.

2021 **Invited Talk**, *Eye Tracking Revisited - Applications in Rendering, Displays, Wearable Computing Systems, and Emerging Event-based Eye Tracking*, ICCV Workshop on Eye Tracking for AR/VR, 10/2021.

2021 **Keynote**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, MICCAI Workshop on Simulation and Synthesis in Medical Imaging (SASHIMI), 09/2021.

2021 **Invited Talk**, *Computational Imaging and Deep Optics*, University College London, CS Department Seminar, 09/2021.

2021 **Invited Talk**, *Enabling Next-generation Holographic Displays with Artificial Intelligence*, OSA Imaging and Applied Optics Congress, 07/2021.

2021 **Invited Talk**, *Neural Scene Representation and Rendering*, CVPR Workshop on 3D Scene Understanding for Vision, Graphics, and Robotics, 06/2021.

2021 **Keynote**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, Photonics North Conference, 05/2021.

2021 **Invited Talk**, *Towards Neural Imaging & Signal Processing*, UC Santa Cruz, Department of Electrical and Computer Engineering Seminar Series, 05/2021.

2021 **Keynote**, *Deep Optics: Learning Cameras, Displays, and Optical Computing Systems*, GDR ISIS Workshop on Co-conception: capteurs hybrides et algorithmes pour des systemes innovants, 05/2021.

2021 **Invited Talk**, *Towards Neural Imaging & Signal Processing*, IEEE Computational Imaging Webinar Series: SPACE, 03/2021.

2021 **Invited Talk**, *Towards Neural Imaging & Signal Processing*, IBM, 03/2021.

2021 **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 Universitaet (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

2024/2025 **E367/CS448I Computational Imaging**, *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).

2023/2024 **E367/CS448I Computational Imaging**, *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).

2022/2023 **EE292E Image Systems Engineering Seminar**, *Autumn, Winter, and Spring Quarter*, Stanford University (co-instructor).

2021/2022 **E367/CS448I Computational Imaging**, *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).

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 IEEE Transactions on Pattern Analysis and Machine Intelligence, 2024–.

Assoc. Editor ACM Transactions on Graphics, 2020–2024.

Assoc. Editor Scientific Reports, Nature Publishing Group, 2015–2021.

Assoc. Editor OSA Optics Express, 2019–2022.

Assoc. Editor IEEE Transactions on Computational Imaging, 2016–2020.

Co-Chair OSA Imaging and Applied Optics Congress, Computational Optical Sensing and Imaging Conference 2021, 2022.

Co-Chair ICCV/ECCV Workshop on Learning 3D Representations for Shape and Appearance 2020, 2021.

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

Co-Chair Pacific Graphics 2019.

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

Program Chair ACM SIGGRAPH Courses 2016.

Industry Chair Int. Conference on Computational Photography (ICCP) 2016, 2021.

Program Chair CVPR Int. Workshop on Computational Cameras and Displays (PROCAMS/CCD) 2012, 2013.

Program Committee ACM SIGGRAPH, Technical Papers PC 2014, 2015, 2017, 2018, 2023, 2024 CoI Coordinator 2019, 2020, 2021.

ACM SIGGRAPH Asia, Technical Papers, *2015, 2020, 2021*.

ACM SIGGRAPH, General Submissions, *2012, 2015, 2016*.

Area Chair Int. Conference on Computer Vision and Pattern Recognition (CVPR) 2018, 2023, 2024, 2025, 2026.

Area Chair Int. Conference on Computer Vision (ICCV) 2021, 2025.

Area Chair Conference on Neural Information Processing Systems (NeurIPS) 2023, 2024, 2025.

Int. Conference on Computational Photography (ICCP), *2013–present*.

OSA Computational Optical Sensing and Imaging (COSI), *2015–present*.

CVPR Int. Workshop on Computational Cameras and Displays (CCD), *2012–present*.

IEEE Virtual Reality Conference (VR), *2024, 2025*.

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*.

Fellow Optica, IEEE.

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

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*, 2017,2021,2022.

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 **System and method for presenting image content on multiple depth planes by providing multiple intra-pupil parallax views**, *M.A. Klug, R. Konrad, G. Wetzstein, B.T. Schowengerdt, M.B. Vaughn*, 2017, US Patent Application 15/789,895.

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).