# David B. Lindell

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<b>Current Appointments</b>	
Assistant Professor	2022
Dept. of Computer Science, University of Toronto	2022–present
Faculty Affiliate Vector Institute	2022–present
vector institute	2022 present
Education	
Stanford University	Stanford, CA
Ph.D. Electrical Engineering	2016–2021
Committee: Gordon Wetzstein, Bernd Girod, Mark Horowitz, Vivek Goyal, James Harris	D 177
Brigham Young University M.Sc. Electrical Engineering	Provo, UT 2015–2016
Advisor: David G. Long	2013–2010
Brigham Young University	Provo, UT
B.Sc. Electrical Engineering	2009–2015
Advisors: David G. Long, Aaron Hawkins	
Previous Professional Experience	
Stanford University	Stanford, CA
Postdoctoral Scholar	2021–2022
Advisor: Gordon Wetzstein	
	Santa Clara CA
Intelligent Systems Lab, Intel Corporation Intern	Santa Clara, CA 2018
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun	2018
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation	2018 Tucson, AZ
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun	2018
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation	2018 Tucson, AZ
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern	2018 Tucson, AZ
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards	2018 <b>Tucson, AZ</b> 2016
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards Google Research Scholar Award	2018 Tucson, AZ 2016
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards Google Research Scholar Award Sony Focused Research Award	2018 Tucson, AZ 2016  2024 2023
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards  Google Research Scholar Award Sony Focused Research Award Sony Faculty Innovation Award	2018 Tucson, AZ 2016  2024 2023 2023
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards Google Research Scholar Award Sony Focused Research Award Sony Faculty Innovation Award Marr Prize Connaught New Researcher Award ACM SIGGRAPH Outstanding Doctoral Dissertation Honorable Mention	2018 Tucson, AZ 2016  2024 2023 2023 2023
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards  Google Research Scholar Award Sony Focused Research Award Sony Faculty Innovation Award Marr Prize Connaught New Researcher Award	2018 Tucson, AZ 2016  2024 2023 2023 2023 2023
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards  Google Research Scholar Award Sony Focused Research Award Sony Faculty Innovation Award Marr Prize Connaught New Researcher Award ACM SIGGRAPH Outstanding Doctoral Dissertation Honorable Mention ACM SIGGRAPH Thesis Fast Forward Honorable Mention CVPR Outstanding Reviewer	2018 Tucson, AZ 2016  2024 2023 2023 2023 2023 2021 2020 2020
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards  Google Research Scholar Award Sony Focused Research Award Sony Faculty Innovation Award Marr Prize Connaught New Researcher Award ACM SIGGRAPH Outstanding Doctoral Dissertation Honorable Mention ACM SIGGRAPH Thesis Fast Forward Honorable Mention CVPR Outstanding Reviewer Stanford Graduate Research Fellowship	2018 Tucson, AZ 2016  2024 2023 2023 2023 2023 2021 2020 2020 2016–2020
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards Google Research Scholar Award Sony Focused Research Award Sony Faculty Innovation Award Marr Prize Connaught New Researcher Award ACM SIGGRAPH Outstanding Doctoral Dissertation Honorable Mention ACM SIGGRAPH Thesis Fast Forward Honorable Mention CVPR Outstanding Reviewer Stanford Graduate Research Fellowship BYU Office of Research & Creative Activities Grant	2018 Tucson, AZ 2016  2024 2023 2023 2023 2023 2021 2020 2020 2016–2020 2015
Intelligent Systems Lab, Intel Corporation Intern Advisor: Vladlen Koltun Rincon Research Corporation Intern  Awards  Google Research Scholar Award Sony Focused Research Award Sony Faculty Innovation Award Marr Prize Connaught New Researcher Award ACM SIGGRAPH Outstanding Doctoral Dissertation Honorable Mention ACM SIGGRAPH Thesis Fast Forward Honorable Mention CVPR Outstanding Reviewer Stanford Graduate Research Fellowship	2018 Tucson, AZ 2016  2024 2023 2023 2023 2023 2021 2020 2020 2016–2020

# **Conference Organization/Editorial Positions**

Area Chair: Neural Information Processing Systems (NeurIPS)	2023, 2024
Area Chair: IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2023-2025
Associate Editor: IEEE Transactions on Computational Imaging	2023–
Computational Imaging Technical Committee: IEEE Signal Processing Society	2025-
Finance Co-Chair: Int. Conference on Computational Photography (ICCP)	2022
Program Co-Chair: Int. Conference on Computational Photography (ICCP)	2025
<b>Program Co-Chair:</b> IEEE Workshop on Computational Cameras and Displays (CCD)	2020,2021,2023
Program Committee: Int. Conference on Computational Photography (ICCP)	2019–2024
Technical Papers Committee: SIGGRAPH Asia	2023
Technical Papers Committee: SIGGRAPH	2025

## **Referee Service**

CVPR	2020–
ECCV	2020–
ICCV	2021–
ICCP	2019–
ICLR	2021–
NeurIPS	2021–
SIGGRAPH	2020–
SIGGRAPH Asia	2022–
WACV	2024–

Nature

Nature Communications

Nature Photonics

Optica

**Optics Express** 

Science Advances

IEEE Transactions on Computational Imaging

IEEE Transactions on Pattern Analysis and Machine Intelligence

## **University Service**

AI Curriculum Committee: Computer Science Department, University of Toronto	2023-2024
Outreach Committee: Computer Science Department, University of Toronto	2023-2025
<b>Undergraduate Affairs Committee:</b> Computer Science Department, University of Toronto	2022-2024
Faculty Search Committee: Computer Science Department, University of Toronto	2024-2025

# **Teaching**

University of Toronto	Instructor
CSC2529: Computational Imaging	2022–2024
University of Toronto	Instructor
CSC420: Introduction to Image Understanding	2023–2024
AAAI Conference on Artificial Intelligence	Instructor
AI for Emerging Inverse Problems in Computational Imaging	2024

**Stanford University** 

EE367/CS448i: Computational Imaging

Stanford University Teaching Assi

EE367/CS448i: Computational Imaging

Teaching Assistant 2020

ACM SIGGRAPH Instructor

Computational Time-Resolved Imaging, Single-Photon Sensing and Non-Line-of-Sight Imaging

2020

2022

Instructor

## **Journal Publications**

- [J13] C. Shentu, E. Li, C. Chen, P. T. Dewi, **D. B. Lindell**, J. Burgner-Kahrs, "MoSS: Monocular shape sensing for continuum robots," *IEEE Robotics and Automation Letters*, 2023.
- [J12] J. N. P. Martel, **D. B. Lindell**, C. Z. Lin, E. R. Chan, M. Monteiro, G. Wetzstein, "ACORN: Adaptive coordinate networks for neural scene representation," *ACM Transactions on Graphics (SIGGRAPH)*, vol. 40, no. 4, pp. 1–13, 2021.
- [J11] **D. B. Lindell** and G. Wetzstein, "Three-dimensional imaging through scattering media based on confocal diffuse tomography," *Nature Communications*, vol. 11, no. 4517, 2020.
- [J10] C. A. Metzler, **D. B. Lindell**, G. Wetzstein, "Keyhole imaging: Non-line-of-sight imaging and tracking of moving objects along a single optical path at long standoff distances," *IEEE Transactions on Computational Imaging*, vol. 7, pp. 1–12, 2020.
- [J9] Z. Sun, **D. B. Lindell**, O. Solgaard, G. Wetzstein, "SPADnet: Deep RGB-SPAD sensor fusion assisted by monocular depth estimation," *Optics Express*, vol. 28, no. 10, pp. 14948–14962, 2020.
- [J8] F. Heide, M. O'Toole, K. Zang, **D. B. Lindell**, S. Diamond, G. Wetzstein, "Non-line-of-sight imaging with partial occluders and surface normals," *ACM Transactions on Graphics* (*ToG*), vol. 38, no. 3, 2019.
- [J7] **D. B. Lindell**, G. Wetzstein, M. O'Toole, "Wave-based non-line-of-sight imaging using fast f-k migration," *ACM Transactions on Graphics (SIGGRAPH)*, vol. 38, no. 4, 2019.
- [J6] F. Heide, S. Diamond, **D. B. Lindell**, G. Wetzstein, "Sub-picosecond photon-efficient 3D imaging using single-photon sensors," *Scientific Reports*, vol. 8, no. 17726, 2018.
- [J5] **D. B. Lindell**, M. O'Toole, G. Wetzstein, "Single-photon 3D imaging with deep sensor fusion," *ACM Transactions on Graphics (SIGGRAPH)*, vol. 37, no. 4, 2018.
- [J4] M. O'Toole, **D. B. Lindell**, G. Wetzstein, "Confocal non-line-of-sight imaging based on the light-cone transform," *Nature*, vol. 555, no. 7696, pp. 338–341, 2018.
- [J3] **D. B. Lindell** and D. G. Long, "High-resolution soil moisture retrieval with ASCAT," *IEEE Geoscience and Remote Sensing Letters*, vol. 13, no. 7, pp. 972–976, 2016.
- [J2] **D. B. Lindell** and D. G. Long, "Multiyear Arctic ice classification using ASCAT and SSMIS," *Remote Sensing*, vol. 8, no. 4, p. 294, 2016.
- [J1] **D. B. Lindell** and D. G. Long, "Multiyear Arctic sea ice classification using OSCAT and QuikSCAT," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 54, no. 1, pp. 167–175, 2016.

### **Conference Publications**

- [C30] S. Bahmani, X. Liu, Y. Wang, I. Skorokhodov, V. Rong, Z. Liu, X. Liu, J. J. Park, S. Tulyakov, G. Wetzstein, A. Tagliasacchi, **D. B. Lindell**, "TC4D: Trajectory-conditioned text-to-4D generation," in *European Conference on Computer Vision (ECCV)*, 2024.
- [C29] S. Bahmani, I. Skorokhodov, V. Rong, G. Wetzstein, L. Guibas, P. Wonka, S. Tulyakov, J. J. Park, A. Tagliasacchi, D. B. Lindell, "4D-fy: Text-to-4D generation using hybrid score distillation sampling," in IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
- [C28] W. Luo, A. Malik, **D. B. Lindell**, "Transientangelo: Few-viewpoint surface reconstruction using single-photon lidar," in *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2024.
- [C27] A. Malik, N. Juravsky, R. Po, G. Wetzstein, K. N. Kutulakos, **D. B. Lindell**, "Flying with photons: Rendering novel views of propagating light," in *European Conference on Computer Vision (ECCV)*, 2024, (**Oral**).

- [C26] P. Mirdehghan, B. Buscaino, M. Wu, D. Charlton, M. E. Mousa-Pasandi, K. N. Kutulakos, **D. B.** Lindell, "Coherent optical modems for full-wavefield lidar," in *ACM SIGGRAPH Asia*, 2024.
- [C25] P. Mirdehghan, M. Wu, W. Chen, **D. B. Lindell**, K. N. Kutulakos, "TurboSL: Dense, accurate and fast 3D by neural inverse structured light," in *IEEE/CVF Conference on Computer Vision and Pattern Recognition* (CVPR), 2024.
- [C24] R. Rangel, X. Sun, A. Barman, R. Gulve, S. Bajic, J. Wang, H. Wang, **D. B. Lindell**, K. N. Kutulakos, R. Genov, "23,000-exposures/s 360fps-readout software-defined image sensor with motion-adaptive spatially varying imaging speed," in *IEEE Symposium on VLSI Technology and Circuits*, 2024.
- [C23] V. Rong, J. Chen, S. Bahmani, K. N. Kutulakos, **D. B. Lindell**, "GStex: Per-primitive texturing of 2D Gaussian splatting for decoupled appearance and geometry modeling," in *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2024.
- [C22] S. Shekarforoush, **D. B. Lindell**, M. A. Brubaker, D. J. Fleet, "Improving ab-initio cryo-em reconstruction with semi-amortized pose inference," in *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.
- [C21] K. Yin, V. Rao, R. Jiang, X. Liu, P. Aarabi, **D. B. Lindell**, "SCE-MAE: Selective correspondence enhancement with masked autoencoder for self-supervised landmark estimation," in *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [C20] R. Gulve, R. Rangel, A. Barman, D. Nguyen, M. Wei, M. A. Sakr, X. Sun, **D. B. Lindell**, K. N. Kutulakos, R. Genov, "Dual-port CMOS image sensor with regression-based HDR flux-to-digital conversion and 80 ns rapid-update pixel-wise exposure coding," in *IEEE International Solid-State Circuits Conference (ISSCC)*, 2023.
- [C19] A. Malik, P. Mirdehghan, S. Nousias, K. N. Kutulakos, **D. B. Lindell**, "Transient neural radiance fields for lidar view synthesis and 3d reconstruction," in *Advances in Neural Information Processing Systems* (*NeurIPS*), 2023, (**Spotlight**).
- [C18] S. Sinha, J. Y. Zhang, A. Tagliasacchi, I. Gilitschenski, **D. B. Lindell**, "SparsePose: Sparse-view camera pose regression and refinement," in *IEEE Conference on Computer Vision and Pattern Recognition* (*CVPR*), 2023.
- [C17] M. Wei, S. Nousias, R. Gulve, D. B. Lindell, K. N. Kutulakos, "Passive ultra-wideband single-photon imaging," in IEEE/CVF International Conference on Computer Vision (ICCV), 2023, (Marr Prize).
- [C16] A. W. Bergman, P. Kellnhofer, Y. Wang, E. R. Chan, **D. B. Lindell**, G. Wetzstein, "Generative neural articulated radiance fields," in *Advances in Neural Information Processing Systems* (*NeurIPS*), 2022.
- [C15] C. Z. Lin, **D. B. Lindell**, E. R. Chan, G. Wetzstein, "3D GAN inversion for controllable portrait image animation," in *ECCV 2022 Workshop on Learning to Generate 3D Shapes and Scenes*, 2022.
- [C14] **D. B. Lindell**, D. Van Veen, J. J. Park, G. Wetzstein, "BACON: Band-limited coordinate networks for neural scene representation," in *IEEE Conference on Computer Vision and Pattern Recognition* (*CVPR*), 2022, (**Oral**).
- [C13] S. Shekarforoush, **D. B. Lindell**, D. J. Fleet, M. A. Brubaker, "Residual multiplicative filter networks for multiscale reconstruction," in *Advances in Neural Information Processing Systems* (*NeurIPS*), 2022.
- [C12] D. Van Veen, R. Van der Sluijs, B. Ozturkler, A. D. Desai, C. Bluethgen, R. D. Boutin, M. H. Willis, G. Wetzstein, **D. B. Lindell**, S. Vasanawala, J. Pauly, A. S. Chaudhari, "Scale-agnostic super-resolution in MRI using feature-based coordinate networks," in *Medical Imaging with Deep Learning*, 2022.
- [C11] Q. Zhao, **D. B. Lindell**, G. Wetzstein, "Learning to solve PDE-constrained inverse problems with graph networks," in *International Conference on Machine Learning (ICML)*, 2022.
- [C10] **D. B. Lindell**, J. N. P. Martel, G. Wetzstein, "AutoInt: Automatic integration for fast neural volume rendering," in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021.
- [C9] A. W. Bergman, **D. B. Lindell**, G. Wetzstein, "Deep adaptive LiDAR: End-to-end optimization of sampling and depth completion at low sampling rates," in *IEEE International Conference on Computational Photography (ICCP)*, 2020.
- [C8] **D. B. Lindell**, M. O'Toole, G. Wetzstein, "Efficient non-line-of-sight imaging with computational single-photon imaging," in *Advanced Photon Counting Techniques XIV*, SPIE, 2020.

- [C7] **D. B. Lindell** and G. Wetzstein, "Confocal diffuse tomography for single-photon 3D imaging through highly scattering media," in *Computational Optical Sensing and Imaging (COSI)*, OSA, 2020.
- [C6] M. Nishimura, **D. B. Lindell**, C. A. Metzler, G. Wetzstein, "Disambiguating monocular depth estimation with a single transient," in *European Conference on Computer Vision (ECCV)*, 2020.
- [C5] V. Sitzmann, J. N. P. Martel, A. W. Bergman, **D. B. Lindell**, G. Wetzstein, "Implicit neural representations with periodic activation functions," in *Advances in Neural Information Processing Systems* (*NeurIPS*), 2020, (**Oral**).
- [C4] S. I. Young, **D. B. Lindell**, B. Girod, D. Taubman, G. Wetzstein, "Non-line-of-sight surface reconstruction using the directional light-cone transform," in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020, (**Oral**).
- [C3] **D. B. Lindell**, G. Wetzstein, V. Koltun, "Acoustic non-line-of-sight imaging," in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019, (**Oral**).
- [C2] **D. B. Lindell**, M. O'Toole, G. Wetzstein, "Towards transient imaging at interactive rates with single-photon detectors," in *IEEE International Conference on Computational Photography (ICCP)*, 2018.
- [C1] M. O'Toole, F. Heide, **D. B. Lindell**, K. Zang, S. Diamond, G. Wetzstein, "Reconstructing transient images from single-photon sensors," in *IEEE Conference on Computer Vision and Pattern Recognition* (*CVPR*), 2017, (**Spotlight**).

#### **Non-Refereed Publications**

- [P3] S. Bahmani, I. Skorokhodov, G. Qian, A. Siarohin, W. Menapace, A. Tagliasacchi, D. B. Lindell, S. Tulyakov, "AC3D: Analyzing and improving 3D camera control in video diffusion transformers," arXiv preprint arXiv:2411.18673, 2024.
- [P2] S. Bahmani, I. Skorokhodov, A. Siarohin, W. Menapace, G. Qian, M. Vasilkovsky, H.-Y. Lee, C. Wang, J. Zou, A. Tagliasacchi, **D. B. Lindell**, S. Tulyakov, "VD3D: Taming large video diffusion transformers for 3d camera control," *arXiv preprint arXiv:*2407.12781, 2024.
- [P1] E. Y. Lin, Z. Wang, R. Lin, D. Miau, F. Kainz, J. Chen, X. C. Zhang, **D. B. Lindell**, K. N. Kutulakos, "Learning lens blur fields," *arXiv preprint arXiv*:2310.11535, 2023.

#### **Public Demonstrations**

- [D3] R. Gulve, R. Rangel, A. Barman, D. Nguyen, M. Wei, M. A. Sakr, X. Sun, **D. B. Lindell**, K. N. Kutulakos, R. Genov, "Low-cost coded-exposure pixel cameras for robust high-speed computational imaging at up to 18,000 exposures per second," in *CVPR Demos*, 2023.
- [D2] M. O'Toole, **D. B. Lindell**, G. Wetzstein, "Real-time non-line-of-sight imaging," in *ACM SIG-GRAPH Emerging Technologies*, 2018.
- [D1] M. O'Toole, **D. B. Lindell**, G. Wetzstein, "Real-time non-line-of-sight imaging," in *CVPR Demos*, 2018.

#### **Theses**

2021: Computational Imaging with Single-Photon Detectors. Ph.D. Thesis.

**2016**: Arctic Sea Ice Classification and Soil Moisture Estimation Using Microwave Sensors. Master's Thesis.

## **Invited Talks**

**2024**: Capturing Dynamic Scenes from Seconds to Picoseconds, Computer Vision Seminar, Seoul National University, Seoul, South Korea

**2024**: Capturing Dynamic Scenes from Seconds to Picoseconds, Graphics Seminar, POSTECH University, Pohang, South Korea

**2024**: Neural Scene Reconstruction from Videos of Propagating Light, Korea AI Summit, Seoul, South Korea

: Capturing Dynamic Scenes from Seconds to Picoseconds, Computational Imaging Seminar, Sony Corporation, Tokyo, Japan

: Capturing Dynamic Scenes from Seconds to Picoseconds, Computer Vision Seminar, University of Tokyo, Tokyo, Japan

: Imaging Anytime Anywhere All at Once: Capturing Dynamic Scenes from Seconds to Picoseconds, UC Berkeley Photobears, Berkeley, CA

: Imaging Anytime Anywhere All at Once: Capturing Dynamic Scenes from Seconds to Picoseconds, Stanford Center for Image Systems Engineering (SCIEN), Stanford, CA

: Flying with Photons: Rendering Novel Views of Propagating Light, Conference on Robots and Vision, Guelph, ON

: Text-to-4D Generation Using Hybrid Score Distillation Sampling, UTMIST Immersion Night, Toronto, ON

: Passive Ultra-Wideband Single-Photon Imaging, Stanford EE367 Computational Imaging (Guest Lecture), Virtual

2024: From Pixels to Perception: Artificial Intelligence and Computer Vision, DGP Academy, Toronto, ON

: Passive Ultra-Wideband Single-Photon Imaging, Simon Fraser University (GrUVi Lab), Vancouver, BC

: Passive Ultra-Wideband Single-Photon Imaging, National Research Council Ultrafast Quantum Photonics Group, Ottawa, ON

: Passive Ultra-Wideband Single-Photon Imaging, 3rd International Computational Imaging Conference, Virtual

: From Pixels to Perception: Artificial Intelligence and Computer Vision, Leadership by Design Workshop, Toronto, ON

: Neural Rendering at One Trillion Frames per Second, UTMIST EigenAI ML Conference, Toronto, ON

2023: Passive Ultra-Wideband Single-Photon Imaging, Photons Canada, Virtual

: Neural Rendering at One Trillion Frames per Second, BIRS Workshop on Generative 3D Models, Banff, AB

2023: Passive Ultra-Wideband Single-Photon Imaging, Photonics North, Montreal, QC

: Physics-Based Visual Computing for Efficient 3D Vision and Sensing, University of Windsor, Windsor, ON

2022: Recent Advances in Non-Line-of-Sight Imaging, IEEE Signal Processing Society Webinar, Virtual

: Physics-Based Visual Computing for Efficient 3D Vision and Sensing, Purdue Computational Imaging Seminar, Virtual

: Confocal Non-Line-of-Sight Imaging and Diffuse Tomography Using Single-Photon Sensors, Imaging and Applied Optics Congress, Vancouver, BC

2022: Physics-Based Visual Computing for Efficient 3D Vision and Sensing, Caltech, Pasadena, CA

: Implicit Neural Representation Networks for Fitting Signals, Derivatives, and Integrals, Silicon Valley ACM SIGGRAPH Chapter, Virtual

: Implicit Neural Representation Networks for Fitting Signals, Derivatives, and Integrals, Samsung AI Centre, Virtual

: Implicit Neural Representation Networks for Fitting Signals, Derivatives, and Integrals, University of Erlangen-Nuremberg, Virtual

2021: Physics-Based Visual Computing for Efficient 3D Vision and Sensing, University of Michigan, Virtual

2021: Physics-Based Visual Computing for Efficient 3D Vision and Sensing, MIT RLE, Virtual

2021: Physics-Based Visual Computing for Efficient 3D Vision and Sensing, University of Chicago, Virtual

2021: Physics-Based Visual Computing for Efficient 3D Vision and Sensing, University of Toronto, Virtual

2021: Physics-Based Visual Computing for Efficient 3D Vision and Sensing, Texas A&M, Virtual

2021: AutoInt: Automatic Integration for Fast Neural Volume Rendering, Google, Virtual

: Implicit Neural Representation Networks for Fitting Signals, Derivatives, and Integrals, Graphics and Mixed Environment Seminar (GAMES), Virtual

2020: A Camera to See Around Corners, Playground/Akasha Imaging, Palo Alto, CA

2019: A Camera to See Around Corners, TEDxBeaconStreet, Boston, MA

**2019**: Computational Imaging with Single-Photon Detectors, Boston University Center for Information & Systems Engineering (CISE), Boston, MA

2019: Efficient Confocal Non-Line-of-Sight Imaging, MIT RLE, Cambridge, MA

2019: Efficient Confocal Non-Line-of-Sight Imaging, MIT Media Lab, Cambridge, MA

**2019**: Computational Imaging with Single-Photon Detectors, Berkeley Center for Computational Imaging, Berkeley, CA

2019: Computational Single-Photon Imaging, Silicon Valley ACM SIGGRAPH Chapter, San Jose, CA

**2019**: Computational Imaging with Single-Photon Detectors, Stanford Center for Image Systems Engineering (SCIEN), Stanford, CA

2019: Computational Single-Photon Imaging, Carnegie Mellon University Graphics Lab, Pittsburgh, PA

PhD Advising

Sep 2024–
Sep 2023–
Sep 2023–
Sep 2022–
Sep 2022–
Sep 2022–
Sep 2024–
Sep 2024–
Sep 2024–
Sep 2023–
May 2024–Dec 2024
May 2024–Dec 2024
May 2024–Dec 2024

Carolina Villamizar  MScAC, University of Toronto  DWave	May 2024–Dec 2024
Kartik Kumar  MScAC, University of Toronto  DNEG	May 2023–Dec 2023
Yihan (Nick) Ni MScAC, University of Toronto DNEG	May 2023–Dec 2023
Kejia Yin <i>MScAC, University of Toronto</i> MODIFACE	May 2023–Dec 2023
Vahid Zehtab  MScAC, University of Toronto  Samsung	May 2023–Dec 2023
EJay Guo  MScAC, University of Toronto  DNEG	May 2022–Dec 2022
Visiting Students	
Siddharth Somasundaram MIT Co-advised with Kyros Kutulakos, Ramesh Raskar	Sep 2024–Dec 2024
Michael Neumayr  TUM  Co-advised with Matthias Nießner	Sep 2024–Apr 2025
Undergraduate Advising	
Undergraduate Advising  Allison Lau	Son 2024_
Undergraduate Advising Allison Lau University of Toronto	Sep 2024–
Allison Lau	Sep 2024– July 2024–
Allison Lau University of Toronto Koichi Namekata	•
Allison Lau University of Toronto  Koichi Namekata University of Toronto  Howard Xiao University of Toronto  NSERC Undergraduate Student Research Award  Mehar Khurana IIT Madras	July 2024–
Allison Lau University of Toronto  Koichi Namekata University of Toronto  Howard Xiao University of Toronto  NSERC Undergraduate Student Research Award  Mehar Khurana	July 2024– May 2024–
Allison Lau University of Toronto  Koichi Namekata University of Toronto  Howard Xiao University of Toronto NSERC Undergraduate Student Research Award  Mehar Khurana IIT Madras Mitacs Globalink Weihan Luo	July 2024– May 2024– May 2024–
Allison Lau University of Toronto  Koichi Namekata University of Toronto  Howard Xiao University of Toronto NSERC Undergraduate Student Research Award  Mehar Khurana IIT Madras Mitacs Globalink Weihan Luo University of Toronto  Zixin Guo University of Toronto	July 2024– May 2024– May 2024– Sep 2023–
Allison Lau University of Toronto  Koichi Namekata University of Toronto  Howard Xiao University of Toronto NSERC Undergraduate Student Research Award  Mehar Khurana IIT Madras Mitacs Globalink Weihan Luo University of Toronto  Zixin Guo University of Toronto University of Toronto Excellence Award  Zach Salehe University of Toronto	July 2024– May 2024– May 2024– Sep 2023– Jan 2023–
Allison Lau University of Toronto  Koichi Namekata University of Toronto  Howard Xiao University of Toronto  NSERC Undergraduate Student Research Award  Mehar Khurana IIT Madras Mitacs Globalink  Weihan Luo University of Toronto  Zixin Guo University of Toronto University of Toronto Excellence Award  Zach Salehe University of Toronto  NSERC Undergraduate Student Research Award  Jason Zhu	July 2024– May 2024– May 2024– Sep 2023– Jan 2023– Jan 2023–May 2024
Allison Lau University of Toronto  Koichi Namekata University of Toronto  Howard Xiao University of Toronto NSERC Undergraduate Student Research Award  Mehar Khurana IIT Madras Mitacs Globalink Weihan Luo University of Toronto  Zixin Guo University of Toronto University of Toronto Excellence Award  Zach Salehe University of Toronto NSERC Undergraduate Student Research Award  Jason Zhu University of Toronto Steven Luo	July 2024– May 2024– May 2024– Sep 2023– Jan 2023– Jan 2023–May 2024 Sep 2023–May 2024

Haojun Qiu University of Toronto	Sep 2022–May 2024
Andrew Qiu University of Toronto	Sep 2023–Dec 2023
Kevin Vaidyan University of Toronto	May 2023–May 2024
Noah Juravsky University of Toronto	May 2023–May 2024
Dorsa Molaverdikhani University of Toronto	Jan 2023–May 2024
Shahmeer Athar University of Toronto	Jan 2023–May 2024
Rishit Dagli University of Toronto	Jan 2023–Dec 2023
Roland Gao <i>University of Toronto</i> NSERC Undergraduate Student Research Award	Jan 2023–Sep 2023
Qing (Amy) Lyu University of Toronto	Jan 2023–May 2023
Louis Zhang University of Toronto	Jan 2023–May 2023
Junru Lin University of Toronto	Sep 2022-May 2023
Justin Tran <i>University of Toronto</i> Thesis: Generative 3D shape modeling using latent space diffusion	Sep 2022–May 2023
Skyler Zhang University of Toronto Thesis: Towards coded high-speed video acquisition using diffusion models	Sep 2022–May 2023
Funding	
NSERC Alliance–Mitacs Grant Implicit Representations for 4D Digital Humans	Jul 2024 – July 2028
Sony Focused Research Award Multiview Burst Imaging for High Dynamic Range and Low-Light Neural Radiance Fields	Sep 2024 – Sep 2025
Sony Faculty Innovation Award  Differentiable Computational Imaging Using Coded Exposure Sensors and Flux-to-Digital Coded Exposure Sensors And Coded Exposure Sensors	Sep 2024 – Sep 2025 onversion
LG Research Grant Learning Controllable 4D Avatars from Portrait Video Collections	May 2024 – April 2025
Google Research Scholar Award Computational Single-Photon Photography for Dynamic Vision in the Dark	Apr 2024 –
Snap Inc. Research Gift Camera Control in 2D Video Generators	Feb 2024 –
NSERC Alliance–Mitacs Grant Ultrafast Phase-Modulated Coherent Lidar Using Off-the-Shelf Optical Modems	Jan 2024 – Jan 2026
CFI Infrastructure Operating Fund Neural Signal Representations for Active 3D Imaging	Dec 2023 – Dec 2028

NSERC Research Tools and Instruments Grant

Sep 2023 – Sep 2024

Single-Photon Cameras for Extreme Computer Vision and Computational Astronomy

XSeed/TRANSFORM HF Grant

Sep 2023 – Sep 2025

Towards Home Monitoring of Heart Failure Patients via Robust and Unbiased Spatial Frequency Domain Imaging

Connaught New Researcher Award

Apr 2023 – Apr 2025

Neural Signal Representations for Active 3D Imaging

NSERC Discovery Launch Supplement

Apr 2022 – Apr 2027

Neural Signal Representations for Physics-Based Machine Learning and Active 3D Imaging

NSERC Discovery Grant

Apr 2022 – Apr 2027

Neural Signal Representations for Physics-Based Machine Learning and Active 3D Imaging

Canada Foundation for Innovation John R. Evans Leaders Fund

Sep 2022 – Mar 2026

Neural Signal Representations for Active 3D Imaging