

CURRICULUM VITAE

KAVITA BALA

Provost
Professor of Computer Science
Cornell University
Ithaca, New York 14853

kavitabala@cornell.edu
300 Day Hall
<http://www.cs.cornell.edu/~kb/>
<http://provost.cornell.edu>

Bio:

Kavita Bala, a computer scientist, entrepreneur, and professor, became the 17th provost of Cornell University on January 1, 2025. She brings a distinguished record of leadership and scholarship to the role. Prior to her appointment, Bala served as the inaugural dean of the Cornell Ann S. Bowers College of Computing and Information Science and as chair of the department of Computer Science. Her foundational research in computer vision, computer graphics, and artificial intelligence has been recognized by election to the American Academy of Arts & Sciences and by induction as a Fellow of the Association for Computing Machinery (ACM).

As dean, Bala secured the naming gift for the Cornell Bowers College, led a significant expansion of faculty to support the college's rapid growth, and launched construction of a new 135,000-square-foot building designed to house robotics labs, experiential learning spaces, and faculty offices. Her leadership helped position the college as a national leader.

As the lead dean of the Cornell AI Initiative, Bala advanced key academic programs, including the creation of new minors in AI and AI in Society, and helped establish the Schmidt AI in Science postdoctoral program at Cornell. She also co-led a university-wide task force that developed guidelines for the responsible use of generative AI in education and learning.

Bala's research has made fundamental contributions to image understanding, including the recognition of materials, styles, and object attributes; the modeling of complex materials; and the use of crowdsourced training data. Her groundbreaking work on style recognition using deep learning led to her co-founding a successful visual search AI startup.

In addition to numerous teaching awards, Bala is a recipient of the SIGGRAPH Computer Graphics Achievement Award, the IIT Bombay Distinguished Alumnus Award, and is a Fellow of the SIGGRAPH Academy.

Bala received a B.Tech. from the Indian Institute of Technology, Bombay, and an M.S. and a Ph.D. in Computer Science from the Massachusetts Institute of Technology.

ACADEMIC CURRICULUM VITAE

Education

1999	Ph.D., Massachusetts Institute of Technology, Computer Science
1995	S.M., Massachusetts Institute of Technology, Computer Science
1992	B.S., Indian Institute of Technology (Bombay), Computer Science

Academic Appointments

2025–present	Provost, Cornell University
2020–2024	Dean, Cornell Bowers College of Computing and Information Science
2018–2020	Chair, Department of Computer Science, Cornell University
2015–present	Professor, Department of Computer Science, Cornell University
2009–2015	Associate Professor, Department of Computer Science, Cornell University
2002–2009	Assistant Professor, Department of Computer Science, Cornell University

Awards

2025	Elected to American Academy of Arts & Sciences
2025	Test-of-Time Award, SIGGRAPH (for SIGGRAPH 2015 paper)
2021	IIT Bombay Distinguished Alumnus Award
2020	ACM SIGGRAPH Computer Graphics Achievement Award, citation
2020	Fellow, ACM SIGGRAPH Academy, citation
2019	Fellow, Association for Computing Machinery (ACM), citation
2015, 09, 06	Excellence in Teaching Awards (Fiona Ip Li '78 and Donald Li '75, James and Mary Tien)
2014	Best paper award, Computational Aesthetics
2014	CACM Research Highlight (best paper invited from SIGGRAPH 2011)
2009	CACM Research Highlight (best paper invited from PLDI 2009)

Boards

2024–present	Board, Sciencenter
2021–present	Board of Trustees, Toyota Technological Institute, Chicago
2021–2025	Board member, ColorStack

Other Related Experience

2015–2018	Co-founder and Chief Scientist, GrokStyle (acquired by Facebook)
2010–2011	Visiting Research Scientist, CSAIL, Massachusetts Institute of Technology
1999–2002	Post-Doctoral Researcher, Program of Computer Graphics, Cornell University

Professional Service

AWARD COMMITTEES	
2024–present	SIGGRAPH Technical Award Committee Chair
2021–2026	SIGGRAPH PhD Thesis Award Committee

2021–2027 SIGGRAPH Academy Selection Committee

EDITORSHIPS

2015–2018 Editor-in-Chief, ACM Transactions on Graphics
2018–2020 Senior Associate Editor, ACM Transactions on Graphics
2013–2015 Senior Associate Editor, ACM Transactions on Graphics
2012–2013 Associate Editor, ACM Transactions on Graphics
2012–2015 Associate Editor, Computer Graphics Forum
2008–2012 Associate Editor, IEEE Transactions on Visualization and Computer Graphics

PROGRAM CHAIR

2021 Co-Chair, International Conference on Computational Photography
2011 Chair, SIGGRAPH Asia Technical Papers
2012 Co-Chair, Indian Conference on Vision, Graphics and Image Processing
2010 Co-Chair, Pacific Graphics, with Pierre Alliez and Kun Zhou
2005 Co-Chair, Eurographics Symposium on Rendering, with Phil Dutré

ADVISORY BOARDS

2015–2023 SIGGRAPH Papers Advisory Group (PAG)
2012–2023 SIGGRAPH Asia Papers Advisory Board
2015–2024, 12, 11 SIGGRAPH Papers Advisory Board
2008–2012 Steering Committee, Eurographics Symposium on Rendering

SELECTED REVIEW COMMITTEES

2023 Wisconsin School of Computer, Data and Information Sciences
2023 University of Toronto, Computer Science Department Review
2023–20 Max Planck Institute, Saarbrücken
2023 Committee of Visitors, CISE Directorate, NSF
2022 University of Maryland, Computer Science Department Review
2022 Review King Abdullah University of Science and Technology (KAUST)

SELECTED PROGRAM COMMITTEES

2022, 20, 18 Area Chair, Computer Vision and Pattern Recognition (CVPR)
2021 Area Chair, International Conference on Computer Vision (ICCV)
2018, 17, 15, 12, 11, 09 SIGGRAPH Papers Committee
07, 06, 04, 03
2016, 14, 10, 08 SIGGRAPH Asia Papers Committee
2014–12, 09–08, 06–02 Eurographics Symposium on Rendering
2015, 13, 09, 08, 07, 04 Pacific Graphics

Publications¹

Books, Book Chapters and Edited Volumes

1. Philip Dutré, Kavita Bala, Philippe Bekaert. *Advanced Global Illumination*, Second Edition, A K Peters Ltd., ISBN 1-56881-307-4, 2006.
2. Philip Dutré, Philippe Bekaert, Kavita Bala. *Advanced Global Illumination*, First Edition, A K Peters Ltd., ISBN 1-568811-77-2, 2003.
3. Fabio Pellacini, Miloš Hašan, Kavita Bala. *Interactive Cinematic Relighting with Global Illumination*, Chapter 9, pp 183–202, *GPU Gems 3*, Addison Wesley, 2007.
4. Kavita Bala, Phil Dutré (Editors). *Rendering Techniques*, Springer Verlag, ISBN 3-905673-23-1, 2005.

Invited Papers

5. Daniel Cabrini Hauagge, Scott Wehrwein, Kavita Bala, Noah Snavely. *Photometric Ambient Occlusion for Intrinsic Image Decomposition*, **Special Issue of PAMI** (extension of CVPR 2013 paper), April 2016.
6. Shuang Zhao, Wenzel Jakob, Steve Marschner, Kavita Bala. *Building Volumetric Appearance Models of Fabric using Micro CT Imaging*, **Research Highlights, Communications of the ACM**, 2014 (invited extension to SIGGRAPH 2011 paper), 57(11): 98–105.
7. Kavita Bala. *Modeling Cloth at Micron Resolution*, Measuring, Modeling, and Reproducing Material Appearance (**Invited Paper**), Volume 9018: 1–6, 2014.
8. Kavita Bala. *Predictive Rendering for Accurate Material Perception*, Human Vision and Electronic Imaging (HVEI) (**Invited Paper**), Volume 82910A: 1–6, 2012.
9. Milind Kulkarni, Keshav Pingali, Bruce Walter, Ganesh Ramanarayanan, Kavita Bala, Paul Chew. *Optimistic Parallelism Requires Abstractions*, **Research Highlights, Communications of the ACM**, 2009 (invited extension to PLDI 2007 paper).

Refereed Journal Publications

10. Mitchell J.P. van Zuijlen, Hubert Lin, Kavita Bala, Sylvia C. Pont, Maarten W.A. Wijnjtes. *Materials In Paintings (MIP): An interdisciplinary dataset for perception, art history, and computer vision*, Public Library Of Science (PLOS) 2021.
11. Scott Wehrwein, Kavita Bala, Noah Snavely. *Scene Summarization via Motion Normalization*, IEEE Transactions on Computer Graphics and Visualization, April 2021, pp. 2495-2501, vol. 27.
12. Fujun Luan, Shuang Zhao, Kavita Bala, Ioannnie Gkioulekas. *Langevin Monte Carlo Rendering with Gradient-based Adaptation*, Transactions on Graphics (SIGGRAPH), 2020.
13. Bei Xiao, Shuang Zhao, Ioannnie Gkioulekas, Wenyan Bi, Kavita Bala. *Effect of geometric sharpness on translucent material perception*, Journal of Vision, 2020.

¹In 2003, SIGGRAPH proceedings began appearing as a special issue of the journal Transactions on Graphics (TOG), so SIGGRAPH papers are reported as SIGGRAPH, ACM Transactions on Graphics. SIGGRAPH papers prior to 2003 are listed under conference publications. In 2008, Eurographics and the Eurographics Symposium on Rendering began appearing as special issues of the journal Computer Graphics Forum, so these papers are reported as Eurographics/Eurographics Symposium on Rendering, Computer Graphics Forum.

14. Balazs Kovacs, Peter O'Donovan, Kavita Bala, Aaron Hertzmann. *Context-Aware Search for Graphic Design*, Transactions on Visualization and Computer Graphics, 2018.
15. Fujun Luan, Sylvain Paris, Eli Shechtman, Kavita Bala. *Deep Painterly Harmonization*, EGSR, Computer Graphics Forum, 2018.
16. Pramook Khungurn, Rundong Wu, James Noeckel, Steve Marschner, Kavita Bala. *Fast Rendering of Fabric Micro-Appearance Models Under Directional and Spherical Gaussian Lights*, SIGGRAPH Asia, Nov 2017.
17. Fujun Luan, Shuang Zhao, Kavita Bala. *Fiber-Level On-the-Fly Procedural Textures*, Computer Graphics Forum (EGSR), June 2017.
18. Nicolas Bonneel, Balazs Kovacs, Sylvain Paris, Kavita Bala. *Intrinsic Decompositions for Image Editing*, Computer Graphics Forum (Eurographics State of the Art Reports), April 2017.
19. Shuang Zhao, Fujun Luan, Kavita Bala. *Fitting Procedural Yarn Models for Realistic Cloth Rendering*, To appear in SIGGRAPH 2016, July 2016.
20. Ivaylo Boyadzhiev, Kavita Bala, Sylvain Paris, Edward Adelson. *Band-Sifting Decomposition for Image Based Material Editing*, ACM Transactions on Graphics, 34(5), Nov 2015, 163:1–16.
21. Pramook Khungurn, Daniel Schroeder, Shuang Zhao, Kavita Bala, Steve Marschner. *Matching Micro-Appearance Models to Real Fabrics*, ACM Transactions on Graphics 35(1), Dec 2015, 1:1–26.
22. Sean Bell, Kavita Bala. *Learning visual similarity for product design with convolutional neural networks*, SIGGRAPH July 2015, ACM Transactions on Graphics, 34(4), Nov 2015, 98:1–10.
23. Sean Bell, Kavita Bala, Noah Snavely. *Intrinsic Images in the Wild*, SIGGRAPH 2014, ACM Transactions on Graphics, 33(4), 159:1–12, 2014.
24. Shuang Zhao, Ravi Ramamoorthi, Kavita Bala. *High-Order Similarity Relations in Radiative Transfer*, SIGGRAPH 2014, ACM Transactions on Graphics, 33(4), 104:1–12, 2014.
25. Rui Wang, Xianjin Yang, Yazhen Yuan, Wei Chen, Kavita Bala, Hujun Bao. *Automatic Shader Simplification using Surface Signal Approximation*, SIGGRAPH Asia 2014, ACM Transactions on Graphics, 33(6), 226:1–11, 2014.
26. Daniel Cabrini Hauagge, Scott Wehrwein, Kavita Bala, Noah Snavely. *Photometric Ambient Occlusion*, Special Issue of PAMI (invited extension of CVPR 2013 paper) (to appear).
27. Laurent Belcour, Kavita Bala, Cyril Soler. *A Local Frequency Analysis of Light Scattering and Absorption*, ACM Transactions on Graphics, 33(5), 163:1–17, 2014.
28. Bei Xiao, Bruce Walter, Ioannis Gkioulekas, Todd Zickler, Edward Adelson, Kavita Bala. *Looking against the light: How perception of translucency depends on lighting direction*, Journal of Vision (JOV) 14(3), 1–17, 2014.
29. Ioannis Gkioulekas, Shuang Zhao, Kavita Bala, Todd Zickler, Anat Levin. *Inverse Volume Rendering with Material Dictionaries*, SIGGRAPH Asia 2013, ACM Transactions on Graphics, 32(6), 162:1–13, 2013.
30. Sean Bell, Paul Upchurch, Noah Snavely, Kavita Bala. *OpenSurfaces: A richly annotated catalog of surface appearance*, SIGGRAPH 2013, ACM Transactions on Graphics, 32(4), 111:1–17, 2013.
31. Shuang Zhao, Miloš Hašan, Ravi Ramamoorthi, Kavita Bala. *Modular Flux Transfer: Efficient Rendering of High-Resolution Volumes with Repeated Structures*, SIGGRAPH 2013, ACM Transactions on Graphics, 32(4), 131:1–12, 2013.
32. Ivaylo Boyadzhiev, Sylvain Paris, Kavita Bala. *User-Assisted Image Compositing for Photographic Lighting*, SIGGRAPH 2013, ACM Transactions on Graphics, 32(4), 36:1–12, 2013.

33. Ioannis Gkioulekas, Bei Xiao, Shuang Zhao, Ted Adelson, Todd Zickler, Kavita Bala. *Understanding the Role of Phase Function in Translucent Appearance*, Transactions on Graphics, 32(5), 147:1–19, 2013.
34. Iyaylo Boyadzhiev, Kavita Bala, Sylvain Paris, Fredo Durand. *User-Guided White Balance for Mixed Lighting Conditions*, SIGGRAPH Asia 2012, ACM Transactions on Graphics, 31(6), 200:1–10, 2012.
35. Bruce Walter, Pramook Khungurn, Kavita Bala. *Bidirectional Lightcuts*, SIGGRAPH 2012, ACM Transactions on Graphics, 31(4), 59:1–11, 2012.
36. Shuang Zhao, Wenzel Jakob, Steve Marschner, Kavita Bala. *Structure-Aware Synthesis for Predictive Woven Fabric Appearance*, SIGGRAPH 2012, ACM Transactions on Graphics, 31(4), 75:1–10, 2012.
37. Adrian Jarabo, Tom Van Eyck, Veronica Sundstedt, Kavita Bala, Diego Gutierrez, Carol O’ Sullivan. *Crowd Light: Evaluating the Perceived Fidelity of Illuminated Dynamic Scenes*, Eurographics (EG), Computer Graphics Forum, 31(2), 565–574, 2012.
38. Nikhil Naik, Shuang Zhao, Andreas Velten, Ramesh Raskar, Kavita Bala. *Single View Reflectance Capture using Multiplexed Scattering and Time-of-flight Imaging*, SIGGRAPH Asia 2011, ACM Transactions on Graphics, 30(6), 171:1–10, 2011.
39. Shuang Zhao, Wenzel Jakob, Steve Marschner, Kavita Bala. *Building Volumetric Appearance Models of Fabric using Micro CT Imaging*, SIGGRAPH 2011, ACM Transactions on Graphics, 30(4), 44:1–10, 2011.
40. Adam Arbree, Bruce Walter, Kavita Bala. *Heterogeneous Subsurface Scattering Using the Finite Element Method*, Transactions on Visualization and Computer Graphics (TVCG), 17(7), 956–969, 2011.
41. Tomas Davidovic, Jaroslav Křivánek, Miloš Hašan, Philipp Slusallek, Kavita Bala. *Combining Global and Local Virtual Lights for Detailed Glossy Illumination*, SIGGRAPH Asia 2010, ACM Transactions on Graphics, 29(6), 143:1–8, 2010.
42. Jaroslav Křivánek, James Ferwerda, Kavita Bala. *Effects of Global Illumination Approximations on Material Appearance*, SIGGRAPH 2010, ACM Transactions on Graphics, 29(4), 112:1–10, 2010.
43. Wenzel Jakob, Adam Arbree, Jon Moon, Kavita Bala, Steve Marschner. *A radiative transfer framework for rendering materials with anisotropic structure*, SIGGRAPH 2010, ACM Transactions on Graphics, 29(4), 53:1–13, 2010.
44. Edgar Velazquez-Armendariz, Shuang Zhao, Miloš Hašan, Bruce Walter, Kavita Bala. *Automatic Bounding of Programmable Shaders for Efficient Global Illumination*, SIGGRAPH Asia 2009, ACM Transactions on Graphics, 28(5), 142:1–9, 2009.
45. Miloš Hašan, Jaroslav Křivánek, Bruce Walter, Kavita Bala. *Virtual Spherical Lights for Many-Light Rendering of Glossy Scenes*, SIGGRAPH Asia 2009, ACM Transactions on Graphics, 28(5), 143:1–6, 2009.
46. Bruce Walter, Shuang Zhao, Nicolas Holzschuch, Kavita Bala. *Single Scattering in Refractive Media with Triangle Mesh Boundaries*, SIGGRAPH 2009, ACM Transactions on Graphics, 28(3), 92:1–8, 2009.
47. Ganesh Ramanarayanan, James Ferwerda, Kavita Bala. *Perception of Complex Aggregates*, SIGGRAPH 2008, ACM Transactions on Graphics, 27(3): 60:1–10, 2008.
48. Miloš Hašan, Edgar Velazquez-Aremendariz, Fabio Pellacini, Kavita Bala. *Tensor Sampling for Rendering Many-Light Animations*, Eurographics Symposium on Rendering (EGSR), Computer Graphics Forum, 27(4): 1105–1114, 2008.

49. Adam Arbree, Bruce Walter, Kavita Bala. *Single-pass Scalable Subsurface Rendering with Lightcuts*, Eurographics (EG), Computer Graphics Forum, 27(2):507–516, 2008.
50. Milind Kulkarni, Keshav Pingali, Ganesh Ramanarayanan, Bruce Walter, Kavita Bala, L. Paul Chew. *Optimistic Parallelism Benefits from Data Partitioning*, Architectural Support for Programming Languages and Operating Systems (ASPLOS), 42(2): 233–243, 2008.
51. Ganesh Ramanarayanan, James Ferwerda, Bruce Walter, Kavita Bala. *Visual Equivalence: Towards a new standard for Image Fidelity*, SIGGRAPH 2007, ACM Transactions on Graphics, 26(3):75:1–11, 2007.
52. Miloš Hašan, Fabio Pellacini, Kavita Bala. *Matrix Row-Column Sampling for the Many-Light Problem*, SIGGRAPH 2007, ACM Transactions on Graphics, 26(3): 26:1–10, 2007.
53. Ganesh Ramanarayanan, Kavita Bala. *Constrained Texture Synthesis via Energy Minimization*, IEEE Transactions on Visualization and Computer Graphics (TVCG), 13(1):167–178, 2007.
54. Bruce Walter, Adam Arbree, Kavita Bala, Donald Greenberg. *Multidimensional Lightcuts*, SIGGRAPH 2006, ACM Transactions on Graphics, 25(3):1081–1088, 2006.
55. Miloš Hašan, Fabio Pellacini, Kavita Bala. *Direct-to-Indirect Transfer for Cinematic Relighting*, SIGGRAPH 2006, ACM Transactions on Graphics, 25(3):1089–1097, 2006.
56. Mike Donikian, Bruce Walter, Kavita Bala, Sebastian Fernandez, Donald Greenberg. *Accurate Direct Illumination Using Iterative Adaptive Sampling*, IEEE Transactions on Visualization and Computer Graphics 2006 (TVCG), 12(3):353–364, 2006.
57. Bruce Walter, Sebastian Fernandez, Adam Arbree, Kavita Bala, Michael Donikian, Donald Greenberg. *Lightcuts: a Scalable Approach to Illumination*, SIGGRAPH 2005, ACM Transactions on Graphics, 24(3):1098–1107, 2005.
58. Kavita Bala, Bruce Walter, Donald Greenberg. *Combining Edges and Points for Interactive High-Quality Rendering*, SIGGRAPH 2003, ACM Transactions on Graphics, 22(3):631–640, 2003.
59. Kavita Bala, Julie Dorsey, Seth Teller. *Radiance Interpolants for Accelerated Bounded-Error Ray Tracing*, ACM Transactions on Graphics (TOG), 18(3):213–256, 1999.
60. Krishna Bala, Thomas Stern, David Simchi-Levi, Kavita Bala. *Algorithms for Routing in Linear Lightwave Networks*, IEEE/ACM Transactions on Networking, 3(4):459–469, 1995.

Refereed Conference and Workshop Publications

61. Utkarsh Mall, Cheng Perng Phoo, Mia Chiquier, Bharath Hariharan, Kavita Bala, Carl Vondrick. *DiSciPLE: Learning Interpretable Programs for Scientific Visual Discovery*, Conference on Computer Vision and Pattern Recognition (CVPR) 2025.
62. Shreelekha Revankar, Cheng Perng Phoo, Utkarsh Mall, Bharath Hariharan, Kavita Bala. *Scale-Aware Recognition in Satellite Images under Resource Constraints*, International Conference on Learning Representations (ICLR) 2025.
63. Hangyu Zhou, Chia-Hsiang Kao, Cheng Perng Phoo, Utkarsh Mall, Bharath Hariharan, Kavita Bala. *AllClear: A Comprehensive Dataset and Benchmark for Cloud Removal in Satellite Imagery*, Conference on Neural Information Processing Systems, NeurIPS '25 (Track on Datasets and Benchmarks).
64. Chia Hsiang Kao, Wenting Zhao, Shreelekha Revankar, Samuel Speas, Snehal Bhagat, Rajeev Datta, Cheng Perng Phoo, Utkarsh Mall, Carl Vondrick, Kavita Bala, Bharath Hariharan. *Towards LLM Agents for Earth Observation*, Terrabytes, ICML Workshop, 2025.

65. Utkarsh Mall, Cheng Perng Phoo, Meilin Kelsey Liu, Carl Vondrick, Bharath Hariharan, Kavita Bala. *Remote Sensing Vision-Language Foundation Models without Annotations via Ground Remote Alignment*, International Conference on Learning Representations (ICLR) 2024.
66. Utkarsh Mall, Cheng Perng Phoo, Meilin Kelsey Liu, Carl Vondrick, Bharath Hariharan, Kavita Bala. *Remote Sensing Vision-Language Foundation Models without Annotations via Ground Remote Alignment*, International Conference on Learning Representations (ICLR) 2024.
67. Utkarsh Mall, Bharath Hariharan, Kavita Bala. *Change-Aware Sampling and Contrastive Learning for Satellite Images*, Computer Vision and Pattern Recognition (CVPR), 2023.
68. Utkarsh Mall, Bharath Hariharan, Kavita Bala. *Change Event Dataset for Discovery from Spatio-temporal Remote Sensing Imagery*, Neural Information Processing Systems (NeurIPS), Datasets and Benchmarks Track, 2022.
69. Utkarsh Mall, Bharath Hariharan, Kavita Bala. *Zero-Shot Learning Using Multimodal Descriptions*, Computer Vision and Pattern Recognition L3D-IVU Workshop (CVPR L3D-IVU), 2022.
70. Xi Deng, Fujun Luan, Bruce Walter, Kavita Bala, Steve Marschner. *Reconstructing Translucent Objects Using Differentiable Rendering*, SIGGRAPH (conference track), 2022.
71. Utkarsh Mall, Kavita Bala, Tamara Berg, Kristen Grauman. *Discovering Underground Maps from Fashion*, Winter Conference on Applied Computer Vision (WACV), 2022.
72. Utkarsh Mall, Bharath Hariharan, Kavita Bala. *Field-Guide Inspired Zero-Shot Learning*, International Conference on Computer Vision (ICCV), 2021.
73. Hadi AlZayer, Hubert Lin, Kavita Bala. *AutoPhoto: Aesthetic Photo Capture using Reinforcement Learning*, International Conference on Intelligent Robots and Systems (IROS), 2021.
74. Fujun Luan, Shuang Zhao, Kavita Bala, Zhao Dong. *Unified Shape and SVBRDF Recovery using Differentiable Monte Carlo Rendering*, Eurographics Symposium on Rendering (EGSR), 2021.
75. Kai Zhang, Fujun Luan, Qianqian Wang, Kavita Bala, Noah Snavely. *PhysSG: Inverse Rendering with Spherical Gaussians for Physics-based Material Editing and Relighting*, Computer Vision and Pattern Recognition (CVPR), 2021.
76. Jung Hyun Cho, Utkarsh Mall, Kavita Bala, Bharath Hariharan. *PiCIE: Unsupervised Semantic Segmentation using Invariance and Equivariance in Clustering*, Computer Vision and Pattern Recognition (CVPR), 2021.
77. Hubert Lin, Mitchell Van Zuijlen, Maarten W. A. Wijntes, Sylvia C. Point, Kavita Bala. *What Can Style Transfer and Paintings Do For Model Robustness?*, Computer Vision and Pattern Recognition (CVPR), 2021.
78. Kai Zhang, Fujun Luan, Qianqian Wang, Kavita Bala, Noah Snavely. *PhysSG: Inverse Rendering with Spherical Gaussians for Physics-based Material Editing and Relighting*, Computer Vision and Pattern Recognition (CVPR), 2021.
79. Jung Hyun Cho, Utkarsh Mall, Kavita Bala, Bharath Hariharan. *PiCIE: Unsupervised Semantic Segmentation using Invariance and Equivariance in Clustering*, Computer Vision and Pattern Recognition (CVPR), 2021.
80. Hubert Lin, Mitchell Van Zuijlen, Maarten W. A. Wijntes, Sylvia C. Point, Kavita Bala. *What Can Style Transfer and Paintings Do For Model Robustness?*, Computer Vision and Pattern Recognition (CVPR), 2021.
81. Hubert Lin, Yuntao Han, Jacopo Banfi, Kavita Bala, Mark Campbell. *DeepSemanticHPPC: Hypothesis-based Planning over Uncertain Semantic Point Clouds*, International Conference on Robotics and Automation (ICRA), 2020.

82. Utkarsh Mall, Kevin Matzen, Bharath Hariharan, Noah Snavely, Kavita Bala. *GeoStyle: Discovering Fashion Trends and Events*, International Conference on Computer Vision (ICCV), 2019.
83. Hubert Lin, Paul Upchurch, Kavita Bala. *Block Annotation: Better Image Annotation with Sub-Image Decomposition*, International Conference on Computer Vision (ICCV), 2019.
84. Hubert Lin, Melinos Averkiou, Evangelos Kalogerakis, Balazs Kovacs, Siddhant Ranade, Vladimir Kim, Siddhartha Chaudhuri, Kavita Bala. *Learning Material-Aware Local Descriptors for 3D Shapes*, 3DV, 2018.
85. Bei Xiao, Wenyan Bi, Shuang Zhao, Ioannis Gkioulekas, Kavita Bala. *Does geometric sharpness affect the perception of translucent materials?*, VSS, 2018.
86. Fujun Luan, Sylvain Paris, Eli Shechtman, and Kavita Bala. *Deep Photo Style Transfer*, CVPR 2017.
87. Paul Upchurch, Jacob Gardner, Robert Pless, Noan Snavely, Kavita Bala, and Kilian Weinberger. *Deep Feature Interpolation for Image Content Changes*, CVPR 2017.
88. Balazs Kovacs, Sean Bell, Noah Snavely, and Kavita Bala. *Shading Annotations in the Wild*, CVPR 2017.
89. Paul Upchurch, Daniel Sedra, Andrew Mullen, Haym Hirsh, Kavita Bala. *Interactive Consensus Games for Labeling Images*, Human Computation (HCOMP), 2016.
90. Ivaylo Boyadzhiev, Jiawen Chen, Sylvain Paris, Kavita Bala. *Do-It-Yourself Lighting Design for Product Videography*, International Conference on Computational Photography (ICCP), (to appear) May 2016.
91. Sean Bell, C. Lawrence Zitnick, Kavita Bala, Ross Girshick. *Inside-Outside Net: Detecting Objects in Context with Skip Pooling and Recurrent Neural Networks*, To appear in Conference on Computer Vision and Pattern Recognition (CVPR), 2016.
92. Andreas Veit, Balazs Kovacs, Sean Bell, Julian McAuley, Kavita Bala, Serge Belongie. *Learning Visual Clothing Style with Heterogeneous Dyadic Co-occurrences*, International Conference on Computer Vision (ICCV), Dec 2015.
93. Scott Wehrwein, Kavita Bala, Noah Snavely. *Shadow Detection and Sun Direction in Photo Collections*, International Conference on 3D Vision (3DV), Nov 2015.
94. Sean Bell, Paul Upchurch, Noah Snavely, Kavita Bala. *Material Recognition in the Wild with the Materials in Context Database*, Conference on Computer Vision and Pattern Recognition (CVPR) 2015, Jun 2015.
95. Ioannis Gkioulekas, Bruce Walter, Kavita Bala, Ted Adelson, Todd Zickler. *On the Appearance of Translucent Edges*, Conference on Computer Vision and Pattern Recognition (CVPR) 2015, Jun 2015.
96. Manohar Srikanth, Kavita Bala, Fredo Durand. *Computational Rim Illumination with Aerial Robots*, Proceedings of the Workshop on Computational Aesthetics 2014, (**Best Paper Award**), 57-66.
97. Daniel Cabrini Hauagge, Scott Wehrwein, Paul Upchurch, Noah Snavely, Kavita Bala. *Reasoning about Photo Collections using Models of Outdoor Illumination*, British Machine Vision Conference, 2014.
98. Daniel Cabrini Hauagge, Scott Wehrwein, Noah Snavely, Kavita Bala. *Reasoning about Photo Collections using Outdoor Illumination Models*, Scene Understanding Workshop, 2014.
99. Daniel Cabrini Hauagge, Scott Wehrwein, Kavita Bala, Noah Snavely. *Photometric Ambient Occlusion*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR) (**Oral presentation**), 2515–2522, 2013.

100. Bei Xiao, Ioannis Gkioulekas, Asher Dunn, Shuang Zhao, Todd Zickler, Ted Adelson, Kavita Bala. *Effects of shape and color on the perception of translucency*, Vision Science Society (VSS), 2012
101. James Ferwerda, Ganesh Ramanarayanan, Bruce Walter, Kavita Bala. *Visual Equivalence: an object-based approach to image quality*, Proceedings of IS&T 16th Color Imaging Conference (CIC16), (in press) 2008.
102. Bruce Walter, Kavita Bala, Milind Kulkarni, Keshav Pingali. *Fast Agglomerative Clustering for Rendering*, Proceedings of Interactive Ray Tracing, (in press) 2008.
103. Milind Kulkarni, Patrick Carribault, Keshav Pingali, Ganesh Ramanarayanan, Bruce Walter, Kavita Bala, L. Paul Chew. *Scheduling Strategies for Optimistic Parallel Execution of Irregular Programs*, Proceedings of Symposium on Parallelism in Algorithms and Architectures (SPAA), 2008.
104. Ganesh Ramanarayanan, Kavita Bala, James Ferwerda, Bruce Walter. *Dimensionality of Visual Complexity in Computer Graphics Scenes*, Proceedings of SPIE Human Vision and Electronic Imaging (HVEI), vol. 6806, 0E:1–10, 2008.
105. Milind Kulkarni, Keshav Pingali, Bruce Walter, Ganesh Ramanarayanan, Kavita Bala, Paul Chew. *Optimistic Parallelism Requires Abstractions*, Proceedings of Programming Languages Design and Implementation (PLDI) 2007, 211–222, 2007.
106. Edgar Velazquez-Armendariz, Eugene Lee, Bruce Walter, Kavita Bala. *Rendering the Render Cache and the Edge-and-Point Image on Graphics Hardware*, Proceedings of Graphics Interface 2006, 211–217, 2006.
107. Kavita Bala, Bruce Walter, James Ferwerda. *Information-Preserving Imaging for Heterogeneous Networked Displays*, Workshop on Information Visualization and Interaction Techniques for Collaboration across Multiple Displays 2006, 2006.
108. Ganesh Ramanarayanan, Kavita Bala, Bruce Walter. *Feature-Based Textures*, Proceedings of the Second Eurographics Symposium on Rendering (EGSR), 265–274, 2004.
109. Ryan Ismert, Kavita Bala, Donald Greenberg. *Detail Synthesis for Image-Based Texturing*, Symposium on Interactive 3D Graphics (I3D), 171–176, 2003.
110. Sebastian Fernandez, Kavita Bala, Donald Greenberg. *Local Illumination Environments for Direct Lighting Acceleration*, Thirteenth Eurographics Workshop on Rendering, 7–14, 2002.
111. Randima Fernando, Sebastian Fernandez, Kavita Bala, Donald Greenberg. *Adaptive Shadow Maps*, Proceedings of SIGGRAPH 2001, Annual Conference Series, 387–390, 2001.
112. Kavita Bala, Julie Dorsey, Seth Teller. *Interactive Scene Editing Using Ray Segment Trees*, Tenth Eurographics Workshop on Rendering, 31–44, 1999.
113. Seth Teller, Kavita Bala, Julie Dorsey. *Conservative Radiance Interpolants for Ray Tracing*, Seventh Eurographics Workshop on Rendering, 257–268, 1996.
114. Kavita Bala, Frans Kaashoek, William Weihl. *Software Prefetching and Caching for Translation Lookaside Buffers*, First Symposium on Operating System Design and Implementation, 243–253, 1994.
115. Krishna Bala, Thomas Stern, Kavita Bala. *Algorithms for Routing in Linear Lightwave Networks*, Tenth Annual Conference of IEEE Infocom 1991, 1–9, 1991.
116. Krishna Bala, Thomas Stern, Kavita Bala. *A Minimum Interference Routing Algorithm for a Linear Lightwave Network*, IEEE Global Communications Conference (Globecom) 1991, 1264–1269, 1991.

Selected Keynotes and Invited Talks

- Distinguished Invitational Spring Lecture, Phi Beta Kappa, 2024.
- Keynote, Generative AI in Education and Research, Joint MIT/Harvard Symposium, 2024.
- Distinguished Speaker Series, Institute for Artificial Intelligence and Data Science, University of Buffalo, 2023.
- Keynote, Computer Vision and Pattern Recognition (CVPR), 2022 (invited audience, 10,000+).
- Keynote, Human-Centered AI (HAI) Spring Conference on Key Advances in Artificial Intelligence, Stanford, 2022.
- Invited Speaker, Computer Vision for Fashion, Art, and Design Workshop, CVPR, 2021.
- Keynote, Optics Fabrication (2021), Optical Design and Fabrication (2021).
- Achievement Award Talk, SIGGRAPH, 2020.
- Keynote, Eurographics, 2020.
- Distinguished Lecture, Purdue University, Sep, 2019.
- Keynote, International Conference on Computational Photography, May, 2019.
- Keynote, Pacific Graphics, October 2018.
- Keynote, Symposium on Virtual Reality and Augmented Reality, Shanghai, October 2018.
- Keynote, Graphics Interface, May 2018.
- Keynote, Winter Applied Computer Vision, March 2018.
- Keynote, King Abdullah University of Science and Technology (KAUST), 2017.
- Keynote, Fiber Society's 75th Anniversary meeting, 2016.
- Invited Talk, Perceptual Representations of Illumination, Shape and Materials, Raischholzhausen, Germany, 2016.
- Invited Talk, Royal Society International Scientific Seminar, United Kingdom, 2016.
- Univ of Maryland, Computer Science Department Distinguished Seminar Series, Nov 2015.
- William and Mary, Computer Science Department Colloquium, Oct 2014.
- Invited Talk, Future of Shitsukan (Material Perception) Research, Tokyo, Japan, July 2014.
- Invited Talk, Proctor and Gamble, 2012.
- Invited Talk, Human Vision and Electronic Imaging (HVEI), Jan 2012.
- Distinguished Speaker, CS Seminar, UC Irvine, Mar 2012.
- Distinguished Lecture, Jones Seminar in Science Technology and Society, Dartmouth, 2010.
- Computer Science Department Colloquium, Harvard University, 2009, 2006.
- Computer Science Department Colloquium, Yale University, 2008.
- *Kalachakra Mandala: Constructing a 3D Model*. Johnson Museum, Tibet Lecture Series, Oct 2007.
- ACM Reflections, University of Illinois Urbana-Champaign, Oct 2005.

Selected Media

- AI Initiative : WSJ: AI in academia vs. industry
- Generation Zero IIT Bombay [Who said she can't, citation]
- Robotic Photographer: [DIYPhotography, engadget, petapixel, ...]
- Women in computing (Oral History) by IEEE.
- GrokStyle technology: example, Forbes, TechCrunch, entrepreneurship.
- Deep Photo Style Transfer : github (10k+ stars, and 1.4k forks). Articles : Verge, DP Review, PetaPixel. #2 on the 30 Amazing Machine Learning Projects for the Past Year (v.2018).
- StreetStyle and AI in fashion : CNN Money, Technology Review, Mobile Mag, ...
- GrokStyle selected to CB Insights 2017 AI 100 list of most promising private AI companies.
- Articles titled "Shazam for Furniture" or "Where can I buy that chair" first run in Cornell Daily Sun (Jan 2017) and Cornell Chronicle (Aug 2016), and picked up by aibusiness.org, Furniture Today, phys.org, sciencemag.com, ...
- Lit Robot, July 2014: MIT News, NBC News, Forbes, Boston Business Journal, Petapixel, ...
- Light Compositing, 2013: ACM Technews, Petapixel, phys.org, Engadget, ...
- SIGGRAPH 2012 Proceedings Image cover.
- CG World Japan article on structure-aware synthesis for fabric designs (2012), time-of-flight BRDF measurement, 2011.
- Fabricating Fabric, Economist, 2011.
- Review, Kalachakra Mandala installation at Rubin Museum of Art, NY Times, 2009.

Selected Outreach

2021–2025	Board, ColorStack
2011	Installation, Asian Art Museum, San Francisco Video for <i>Into the Land of Kalachakra</i> , Demo reel for PBS TV show
2008	Installation, Rubin Museum of Art, New York City
2007	3D model of Kalachakra Mandala, collaboration with Namgyal Monastery In honor of the Dalai Lama's visit to Cornell
2007	Installation, <i>Bridging Worlds</i> exhibition at Uris Library Installation, <i>Tibet Day</i> , Johnson Museum, Cornell

Students and Post-Doctoral Researchers

PhD Chair	Hubert Lin, Fujun Luan, Paul Upchurch, Sean Bell, Ivaylo Boyadzhiev. Shuang Zhao, Miloš Hašan, Adam Arbree, Ganesh Ramanarayanan,
Co-Chair	Lekha Revankar (current), Rajeev Datta (current), Utkarsh Mall, Scott Wehrwein, Pramook Khungurn, Kevin Matzen, Kyle Wilson, Daniel Hauagge.