

# Ko Nishino

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<b>Education</b>	<b>Columbia University</b> Postdoctoral Research Scientist, Department of Computer Science, Sept. 2002 – July 2005 Advisor: Professor Shree K. Nayar	New York, NY
	<b>The University of Tokyo</b> Ph.D. in Computer Science, Graduate School of Science, March 2002 “Photometric Object Modeling : Rendering from a Dense/Sparse Set of Images” Advisor: Professor Katsushi Ikeuchi M.E. in Info. and Comm. Engineering (ECE), Graduate School of Engineering, March 1999 “Appearance Compression and Synthesis based on 3D Model for Mixed Reality” Advisor: Professor Katsushi Ikeuchi B.E. in Info. and Comm. Engineering (ECE), Faculty of Engineering, March 1997 “KL1 Abstract Interpreter” Advisor: Professor Takashi Chikayama	Tokyo, Japan
<b>Employment</b>	<b>Drexel University, Department of Computer Science</b> <i>Professor with Tenure</i>	Philadelphia, PA Sept. 2016 –
	<b>Drexel University, Department of Computer Science</b> <i>Associate Department Head for Graduate Affairs</i>	Philadelphia, PA Sept. 2013 –
	<b>National Institute of Informatics</b> <i>Visiting Professor</i>	Tokyo, Japan July 2015 –
	<b>University of Pennsylvania, Computer and Information Science Department</b> <i>Adjunct Professor</i>	Philadelphia, PA Sept. 2014 –
	<b>Osaka University, Institute of Industrial Scientific and Industrial Research</b> <i>Visiting Professor</i>	Osaka, Japan Sept. 2012 –
	<b>Carnegie Mellon University, Robotics Institute</b> <i>Visiting Associate Professor</i>	Pittsburgh, PA March 2013 – June 2013
	<b>Drexel University, Department of Computer Science</b> <i>Associate Professor with Tenure</i>	Philadelphia, PA Sept. 2011 – Aug. 2016
	<b>Drexel University, Department of Computer Science</b> <i>Assistant Professor</i>	Philadelphia, PA Sept. 2005 – Aug. 2011
	<b>Microsoft Research, Vision-based Modeling Group</b> <i>Intern Researcher</i>	Redmond, WA 1999, 2000, 2001
<b>Honors and Awards</b>	IEEE Senior Member, 2016 Outstanding Reviewer Award, Meeting on Image Recognition and Understanding, 2015	

Outstanding Reviewer Award, IEEE Conference on Computer Vision and Pattern Recognition, 2014  
Outstanding Reviewer Award, IEEE Conference on Computer Vision and Pattern Recognition, 2013  
Best Paper Award, Meeting on Image Recognition and Understanding, 2011  
Second Place, Mentor of the Year Award, Graduate Student Association, Drexel University, 2009  
Outstanding Reviewer Award, IEEE Int'l Conference on Computer Vision, 2008  
CAREER Award, National Science Foundation, 2008  
Two Best Paper Awards, Meeting on Image Recognition and Understanding, 2002  
Best Paper Award, International Society on Virtual Systems and Multimedia, 2000  
Best Paper Award, The Virtual Reality Society of Japan, 1999

#### **Press Coverage**

PhillyVoice *The science of... crowd size estimation*, Aug. 11th 2015.  
Newsweek *"Meet the Eye Cam: Processed reflection from the cornea can make the hindsight a reality"*, Jul. 12th 2004.  
NewScientist *"Twinkle Eyes Animate Movies"*, Jul. 24th 2004.  
New York Times *"Fleeting Experience, Mirrored in Your Eyes"*, Jul. 29th 2004.  
Others including International Herald Tribunes, NYSTAR, Science Daily, ACM Tech News, Yomiuri Shinbun (Japanese), CGWorld (Japanese)

#### **Patents**

Co-inventor with Zhengyou Zhang and Katsushi Ikeuchi, *"View-dependent Image Synthesis"*, US Patent 6639594, granted Oct. 28 2003.

#### **Professional Activities**

##### **Editorial Boards**

IPSJ Transactions on Computer Vision and Applications, Springer, Associate Editor in Chief (2017–)  
IEEE Transactions on Pattern Analysis and Machine Intelligence, Associate Editor (2015–)  
International Journal of Computer Vision, Springer, Associate Editor (2010–)  
Machine Vision and Applications, Springer, Associate Editor (2012–2015)  
Transactions on Computer Vision and Applications, IPSJ, Associate Editor (2013–2017)  
Encyclopedia of Computer Vision, Springer, Editor (2010–2014)

##### **Grant Panels/Reviews**

NSF Directorate for Computer and Information Science and Engineering (2007–2012, 2014–)

##### **Organizing Committees**

Asian Conference on Computer Vision, General Chair (2020)  
IEEE Conference on Computer Vision and Pattern Recognition, Area Chair (2018)  
IEEE International Conference on Computer Vision, Area Chair (2017)  
IEEE Conference on Computer Vision and Pattern Recognition, Area Chair (2017)  
Asian Conference on Computer Vision, Program Chair (2016)  
IEEE International Conference on Computer Vision, Area Chair (2015)  
European Conference on Computer Vision, Area Chair (2014)  
Asian Conference on Computer Vision, Area Chair (2014)  
IEEE Conference on Computer Vision and Pattern Recognition, Area Chair (2012)  
IEEE/RSJ International Conference on Intelligent Robots and Systems, Area Editor (2012)  
IEEE First Workshop on Modeling, Simulation and Visual Analysis of Large Crowds, Program Chair (2011)  
IEEE Applications of Computer Vision in Archaeology, Publications Chair (2010)

##### **Program Committees**

IEEE International Conference on Computer Vision (2007, 2009, 2011, 2013)  
IEEE Conference on Computer Vision and Pattern Recognition (2004–2016)  
European Conference on Computer Vision (2004, 2006, 2008, 2010, 2012, 2016)  
AAAI Conference on Artificial Intelligence (2014)

Asian Conference on Computer Vision (2003, 2005–2007)  
IAPR International Conference on Pattern Recognition (2008–2010)  
3D Processing, Visualization, and Transmission (2004, 2006)  
IEEE International Workshop on Projector-Camera Systems (2010)  
IEEE International Workshop on Point Cloud Processing (2012)  
IEEE Color and Photometry in Computer Vision Workshop (2011–2013)

## **Reviewer**

### Journal

International Journal of Computer Vision  
IEEE Transactions on Pattern Analysis and Machine Intelligence  
IEEE Transactions on Image Processing  
IEEE Transactions on Computer Graphics and Visualization  
IEEE Signal Processing Magazine  
Communications of the ACM  
ACM Computing Surveys  
ACM Transactions on Graphics  
Computer Vision and Image Understanding  
Journal of Mathematical Imaging and Vision  
Machine Vision and Application  
Neural Processing Letters

### Conference

ACM SIGGRAPH  
ACM SIGGRAPH Asia  
IEEE International Conference on Computer Vision  
IEEE Computer Vision and Pattern Recognition  
European Conference on Computer Vision  
Asian Conference on Computer Vision  
IEEE Visualization  
ACM CHI  
EuroGraphics  
EuroGraphics Symposium on Rendering

## **Keynote Talks**

“Computational Material Perception,” The 23rd Symposium on Sensing via Image Information, 6/9/2017  
“Going With the Flow: Pedestrian Efficiency in Crowded Scenes,” International Joint Workshop on Advanced Sensing/Visual Attention and Interaction, 11/5/2013  
“Visual Material Recognition,” 16th Meeting on Image Recognition and Understanding, 7/31/2013  
“Visual Material Recognition,” 9th Workshop on Perception Beyond the Visible Spectrum, 6/24/2013  
“Visual Material Recognition,” 4th Workshop on Recent Trends in Computer Vision, 1/8/2013  
“Visual Material Recognition,” 7th Int’l Workshop on Robust Computer Vision, 1/5/2013

## **Invited Talks**

Kyoto University, Brain Information Seminar, 1/19/2017  
NICT-NSF Collaborative Workshop on Computational Neuroscience, 1/18/2017  
Osaka University-NICT, Center for Information and Neural Networks, 1/16/2017  
University of Tokyo, Department of Computer Science, 1/13/2017  
University of Tokyo, Institute of Industrial Science, 1/11/2017  
Huawei Visual Computing Workshop and Retreat, 12/2/2016  
Innovative Shitsukan Science and Technology, 6/21/2016  
University of Pennsylvania, Computer Graphics Laboratory, 6/2/2016  
University of Arizona, Space Object Behavioral Sciences, 5/5/2016  
Amazon.com Inc., 10/26/2015

National Institute for Physiological Sciences, Komatsu Laboratory, 10/15/2015  
 NTT, Communication Science Laboratory, 10/13/2015  
 Waseda University, Morishima Laboratory, 10/12/2015  
 The College of New Jersey, Computer Science Colloquium, 4/21/2015  
 University of Tokyo, Okawa Symposium, 3/5/2015  
 Massachusetts Institute of Technology, Perceptual Science Seminar, 10/27/2014  
 University of California Los Angeles, VCLA Seminar, 9/22/2014  
 Int'l Symposium on the Future of Shitsukan Research (Material Perception), 7/17/2014  
 Dagstuhl Seminar on Interaction and Collective Movement Processing, 3/23-28/2014  
 University of California Berkeley, Visual Computing Seminar, 11/22/2013  
 University of California San Diego, Computer Vision Seminar, 11/21/2013  
 University of Central Florida, CRCV Seminar, 5/17/2013  
 Carnegie Mellon University, RI Seminar, 5/10/2013  
 Nagoya University, IEICE Seminar, 12/20/2012  
 Columbia University, CAVE Seminar, 6/8/2012  
 Rochester Institute of Technology, CIS Seminar, 4/18/2012  
 University of North Carolina at Chapel Hill, GAMMA Seminar, 3/28/2012  
 University of California Los Angeles, IEEE CVPR Area Chair Meeting, 2/27/2012  
 Osaka University, SANKEN Workshop, 1/12/2012  
 NSF-JST Workshop on Cognitive Robotics, 10/7/2011  
 University of Tokyo, Computer Vision Seminar, 12/16/2010  
 Pennsylvania State University, CSE Colloquium, 3/22/2010  
 University of Maryland, CfAR Seminar, 3/5/2010  
 University of Pennsylvania, GRASP Seminar, 2/19/2010  
 Carnegie Mellon University, VASC Seminar, 2/15/2010  
 University of Toronto, AI Computational Vision CS Seminar, 2/5/2010  
 Temple University, CIS Colloquium, 1/27/2010  
 Drexel IEEE Graduate Forum Technical Poster Symposium, Distinguished Lecture, 5/4/2009

## Students

### Current PhD Students

Gabriel Schwartz, *Visual Material Recognition* (2011–)  
 Leizer Teran, *TBD* (2014–)  
 Paras Wadekar, *TBD* (2015–)

### Past PhD Students

Stephen Lombardi, *Radiometric Scene Decomposition: Complex Reflectance and Natural Illumination from Images* (September 2015, Oculus Research)  
 Geoffrey Oxholm, *Reconstructing Geometry from Its Latent Structures* (June 2014, Adobe Research)  
 Louis Kratz, *Visual Analysis of Crowded Scenes* (June 2012, Curalate)

### Past MS Students

Prabin Bariya, *Scale Variability of 3D Geometry* (June 2010)  
 Geoffrey Oxholm, *Nonrigid Image Registration* (June 2009, PhD Student at Drexel)  
 John Novatnack, *Scale-Dependent 3D Geometric Features and Descriptors* (June 2008, Google)

### Past BS Students

Dennis Shtatnov (2015)  
 Ian Johnston (Math, June 2010, PhD Student at Boston Univ.)

## Honors and Awards to Students

Jay Modi Memorial Award, Dept. of CS, Drexel University, 2016: Gabriel Schwartz  
 Harry Brown, Jr. Endowed Fellowship, 2013: Stephen Lombardi  
 Research Award, Highly Commended, CoE, Drexel University, 2013: Stephen Lombardi  
 George Hill, Jr. Endowed Fellowship, CoE, Drexel University, 2013: Gabriel Schwartz

Jay Modi Memorial Award, Dept. of CS, Drexel University, 2013: Stephen Lombardi  
 Outstanding Research Award, Dept. of CS, Drexel University, 2012: Louis Kratz  
 George Hill, Jr. Endowed Fellowship, CoE, Drexel University, 2012: Stephen Lombardi  
 Dean's Fellowship, CoE, Drexel University, 2010: Stephen Lombardi, Gabriel Schwartz  
 George Hill, Jr. Endowed Fellowship, CoE, Drexel University, 2010: Geoffrey Oxholm  
 Best Poster Award, Third Annual Research Symposium, Drexel IEEE, 2010: Geoffrey Oxholm  
 Student Travel Grant, European Conference on Computer Vision, 2010: Geoffrey Oxholm  
 Provost's Fellowship, Drexel University, 2010: Stephen Lombardi  
 Jay Modi Memorial Award, Dept. of CS, Drexel University 2010: Louis Kratz  
 Provost's Fellowship, Drexel University, 2009: Geoffrey Oxholm, Stephen Lombardi  
 Dean's Fellowship, CoE, Drexel University, 2009: Geoffrey Oxholm, Stephen Lombardi  
 Dean's Fellowship, CoE, Drexel University, 2008: Prabin Bariya  
 Koerner Family Fellowship, CoE, Drexel University, 2009: Louis Kratz  
 Best Poster Award, Second Annual Research Symposium, Drexel IEEE, 2009: Louis Kratz  
 George Hill, Jr. Endowed Fellowship, CoE, Drexel University, 2007: Louis Kratz  
 Honorable Mention, Outstanding Undergraduate Research Award, Computing Research Association, 2006: John Novatnack  
 Outstanding Research Award, Dept. of CS, Drexel University, 2005: John Novatnack

## Teaching

### Newly Developed Courses

- CS435 (CS480) Computational Photography* (undergraduate level)
- CS583 (CS480/CS680) Introduction to Computer Vision* (graduate level)
- CS634 (CS680) Advanced Computer Vision* (graduate level)
- CS613 Machine Learning* (graduate level) (completely revamped)

### Offerings<sup>1</sup>

Term	Level	Course Number: Title	Students	COE Eval (overall/ inst.)
2005-06 W	G	CS680: Computer Vision I	14	4.08/4.46
2005-06 S	G	CS680: Computer Vision II	5	4.75/5.00
2006-07 F	UG	CS480: Computational Photography	12	4.44/4.89
2006-07 W	UG	CS480: Introduction to Computer Vision	6 (13)	4.80/5.00
–	G	CS680: –	7 (13)	4.43/4.57
2006-07 W	G	CS690: Machine Learning in Computer Vision	2	–
2006-07 S	UG-G	CS480-680: Advanced Computer Vision	5	5.00/5.00
2007-08 F	UG	CS480: Computational Photography	8	4.38/4.38
2007-08 F	G	CS690: Adv. Topics in Comp. Photography	1	–
2007-08 W	G	CS680: Introduction to Computer Vision	14	–
2007-08 S	G	CS613: Machine Learning	12	–
2008-09 F	UG	CS498: Statistical Appearance Modeling	1	–
2008-09 F	G	CS583: Introduction to Computer Vision	13	–
2008-09 W	UG	CS435: Computational Photography	8	4.5/4.25
2008-09 S	G	CS680: Advanced Computer Vision	9	3.67/3.5
2009-10 F	G	CS583: Introduction to Computer Vision	14	4.22/4.22
2009-10 W	UG	CS435: Computational Photography	11	4.6/4.6
2009-10 S	G	CS613: Machine Learning	17	4.71/4.71

<sup>1</sup>Thesis credits CS898 and research credits CS997 are not listed. COE Course Evaluation results are missing for 2007-08 Winter, Spring and 2008-09 Fall due to system failure.

Term	Level	Course Number: Title	Students	COE	Eval (overall/ inst.)
2010-11 F	G	CS583: Introduction to Computer Vision	15	4.71	4.57
2009-10 W	UG	CS435: Computational Photography	15	4.25	4.50
2011-12 S	G	CS613: Machine Learning	23	4.00	4.56
2011-12 S	G	CS613: Machine Learning (online)	5	4.50	4.50
2012-13		Sabbatical			
2013-14 F	U	CS480: ST: Computer Vision	4	3.00	3.00
2013-14 F	G	CS583: Introduction to Computer Vision	21	4.33	5.00
2013-14 F	G	CS583: Introduction to Computer Vision (online)	9	4.33	4.67
2014-15 F	U	CS435: Computational Photography	15	4.5	4.5
2014-15 F	U	CS435: Computational Photography (online)	8	4.5	4.5
2015-16 S	G	CS583: Introduction to Computer Vision	20	4.6	4.6
2015-16 S	G	CS583: Introduction to Computer Vision (online)	11	4.7	4.7
2016-17 S	G	CS583: Introduction to Computer Vision	21	4.6	4.6
2016-17 S	G	CS583: Introduction to Computer Vision (online)	12	4.4	4.5

### Senior Design Projects

*4D Archaeological Data Exploration*, Brant Olsen, Mark Golazeski, Ben Rockstroh, Adam Miller, Patrick Smith, Second place in department, 2008–09

*Boss Spy*, Brendan Budine, Paul J. Melici, John Novatnack, Abbas Omar (co-advised with Prof. Ali Shokoufandeh), First place in department, 2005–06

### Funding

[G1] *Computational Material Perception*, Office of Naval Research, \$450 000, 2017–2020, PI Ko Nishino (100%)

[G2] *RI: Small: Collaborative Research: Seeing Surfaces: Actionable Surface Properties from Vision*, National Science Foundation (CISE IIS RI), \$250 000, 2017-2020, PI Ko Nishino (Lead Institution, 100%) (with Kristin Dana of Rutgers University) total \$500 000

[G3] *Collaborative Research: Living Building Information Model (BIM): A Layered Approach for Automatic and Continuous Built Environment Model Update*, National Science Foundation (CMMI CIS), \$200 000, 2016-2019, PI Liang Chung Lo (67%) co-PI Ko Nishino (33%)

[G4] *RI: Small: Collaborative Research: MatCam: A Camera that Sees Materials*, National Science Foundation (CISE IIS RI), \$250 000 and REU supplement \$8 000, 2014-2017, PI Ko Nishino (100%) (with Kristin Dana of Rutgers University) total \$500 000

[G5] *Visual Material Understanding*, Office of Naval Research, \$360 000, 2014–2017, PI Ko Nishino (100%)

[G6] *EAGER: A Local-Global Approach Towards Omnipresent Vision*, National Science Foundation (CISE IIS RI), \$184 416, 2013–2015, PI Ko Nishino (100%)

[G7] *Clinical Evaluation of Four Muscle Tenotomy Surgery for Nystagmus*, Wills Eye Institute-Drexel, \$15 000, 2013–2014, PI Ko Nishino (100%) (Collaborative proposal with Leonard Nelson at Wills Eye Institute)

[G8] *Physically-based Statistical Approaches to Radiometric Scene Understanding*, Office of Naval Research, \$292 715, 2010–2013, PI Ko Nishino (100%)

[G9] *RI: Medium: Collaborative Research: Recognition of Materials*, National Science Foundation (CISE IIS RI), \$392 638, 2010–2014 (2015 NCE), PI Ko Nishino (100%) (with Srinivasa Narasimhan of Carnegie Mellon University and Shree Nayar of Columbia University) total \$1 073 178

[G10] *CAREER: Scale Variability of 3D Geometry for Computer Vision*, National Science Foundation (CISE IIS RI), \$450 000 and REU supplement \$15 000, 2008–2013, PI Ko Nishino (100%)

[G11] *The 3D Colonial Philadelphia Project – Digital Restoration of Thin-shell Objects for Historical Archaeological Artifact Analysis and Interpretation*, National Science Foundation (CISE IIS III), \$737 737, 2008–2011, PI Fernand Cohen, co-PIs Ko Nishino, Ali Shokoufandeh, Glen Muschio, Patti Jeppeson (25%)

[G12] *Detecting Atypical Events in Videos of Extremely Cluttered Scenes*, Nippon Telegraph and Telephone Corporation, \$90 000, 2006–2008, PI Ko Nishino (100%)

#### **University Services Service Committees**

Dept. of Computer Science Tenure and Promotion Committee, Chair and Member (2015)  
Dept. of Computer Science Faculty Search Committee (2015)  
Dept. of Computer Science Faculty Search Committee, Chair (2014)  
College of Computing and Informatics Strategic Committee (2014)  
Dept. of Computer Science Graduate Curriculum Committee, Chair (2013–)  
College of Computing and Informatics Research Operations Council (2013–2014)  
College of Engineering Junior Faculty Advisory Committee (2008–2010)  
Dept. of Computer Science Colloquium Series Committee, Chair (2010)  
Dept. of Computer Science Undergraduate Recruiting Committee (2008–2009)  
Dept. of Computer Science Graduate Curriculum Committee (2005–2009, 2011)  
Dept. of Computer Science Faculty Search Committee (2008, 2012)  
Dept. of Computer Science Student Awards Committee (2006)  
College of Engineering High School Summer Mentorship Program (2007–2009)  
College of Engineering Research Experience for Teachers Program (2006–2009)  
College of Engineering Math and Science Partnership Program (2007)  
Drexel Research Day, Judge (2010)

#### **Thesis Committees**

PhD Defense  
Stephen Lombardi (Drexel CS, 9/15/2015, Chair, Advisor)  
Raymond Canzanese (Drexel ECE, 5/8/2015)  
Geoffrey Oxholm (Drexel CS, 6/6/2014, Chair, Advisor)  
Louis Kratz (Drexel CS, 5/3/2012, Chair, Advisor)  
Tony Fast (Drexel MSE, 6/14/2011)  
Keith Sevcik (Drexel MEM, 4/7/2010)

Chenyu Wu (CMU RI, 1/8/2010)  
Trip Denton (Drexel CS, 6/4/2007)  
Cuping Zhang (Drexel ECE, 10/20/2006)  
M. Fatih Demirci (Drexel CS, 12/12/2005, Chair)

#### PhD Proposal

Gabriel Schwartz (Drexel CS, 1/31/2017, Chair, Advisor)  
Hang Zhang (Rutgers ECE, 1/31/2017)  
Stephen Lombardi (Drexel CS, 1/21/2015, Chair, Advisor)  
Robert Lass (Drexel CS, 10/1/2014)  
Raymond Canzanese (Drexel ECE, 4/21/2014)  
Geoffrey Oxholm (Drexel CS, 6/11/2013, Chair, Advisor)  
Tony Fast (Drexel MSE, 5/12/2011)  
David Turner (Drexel MSE, 3/14/2011)  
Manolya Eyyiyurekli (Drexel CS, 4/2/2010 Chair)  
Keith Sevcik (Drexel MEM, 11/24/2009)  
Chenyu Wu (CMU RI, 9/7/2007)  
Trip Denton (Drexel CS, 4/26/2007)

#### PhD Candidacy

Pavan Kantharaju (Drexel CS, 12/1/2016)  
Stephen Lombardi (Drexel CS, 9/15/2011, Advisor)  
Geoffrey Oxholm (Drexel CS, 1/13/2011)  
David Turner (Drexel MSE, 4/13/2010)  
Edward Stehle (Drexel CS, 3/4/2010, Chair)  
Linge Bai (Drexel CS, 8/20/2009, Chair)  
Louis Kratz (Drexel CS, 5/22/2008, Advisor)  
Manolya Eyyiyurekli (Drexel CS, 12/14/2007)  
Jeff Abrahamsom (Drexel CS, 3/21/2006)  
Trip Denton (Drexel CS, 11/2/2005, Chair)

#### Master Thesis Defense

Rafael Campos (Drexel CS, 12/5/2016)  
Md. Alimoor Reza (Drexel CS, 8/8/2011, Chair)  
Dan Bodenstein (Drexel DM, 7/18/2011)  
Dan Hennessey (Drexel CS, 7/3/2009, Chair)  
John Novatnack (Drexel CS, 5/29/2008, Advisor)

#### Outreach

Noyan Baykal, Koc School, Drexel CoE High School Mentorship (3 weeks, July 2009)  
Virginia Brady, Cleveland Elementary School, Drexel CoE Research Exp. for Teachers (July 2008)  
Mehmet Secan Mihmanli, Koc School, Drexel CoE High School Mentorship (July 2008)  
Amber Mckown, Downingtown High School, Drexel CoE High School Mentorship (July 2007)  
Craig Polakoff, Upper Moreland High School, Drexel CoE Research Exp. for Teachers (July 2007)  
Susan Brennan, Sulzburger Middle School, Drexel CoE Research Exp. for Teachers (July 2006)  
Talks and demonstrations at open houses at the university, college, and department levels and as part of the Drexel CoE Math and Science Partnership program

#### Publications

Google Scholar: <http://scholar.google.com/citations?user=SXXEZhYAAAAAJ&hl=en>

#### Book

[A1] Saad Ali, Ko Nishino, Dinesh Manocha and Mubarak Shah (Eds.), "Modeling Simulation and Visual Analysis of Crowds: A Multidisciplinary Perspective," ISBN 9781461484820, Springer, 2013.

#### Book Chapter



- [B1] Ko Nishino and Louis Kratz, "Modeling Crowd Flow for Video Analysis of Crowded Scenes," S. Ali, K. Nishino, D. Manocha and M. Shah (Eds.), *Modeling Simulation and Visual Analysis of Crowds: A Multidisciplinary Perspective*, ISBN 9781461484820, Springer, in print, 2013.
- [B2] Louis Kratz and Ko Nishino, "Spatio-temporal Motion Pattern Models of Extremely Crowded Scenes," L. Wang, G. Zhao, L. Cheng, and M. Pietikäine (Eds.), *Machine Learning for Vision-based Motion Analysis: Theory and Techniques*, ISBN 9780857290564, Springer, pp263–274, 2010.
- [B3] Ko Nishino and Shree K. Nayar, "Extraction of Visual Information from Images of Eyes," Riad Hammoud (Ed.) *Passive Eye Monitoring: Algorithms, Applications and Experiments*, ISBN 9783540754114, Chapter 7, Springer, pp153–177, 2008.
- [B4] Ko Nishino and Katsushi Ikeuchi, "Robust Simultaneous Registration of Multiple Range Images," Katsushi Ikeuchi and Daisuke Miyazaki (Ed.) *Digitally Archiving Cultural Objects*, ISBN 9780387758060, Chapter 5, Springer, pp71–86, 2007.
- [B5] Tomohito Masuda, Yuichiro Hirota, Ko Nishino, and Katsushi Ikeuchi, "Simultaneous Determination of Registration and Deformation Parameters among 3D Range Images," Katsushi Ikeuchi and Daisuke Miyazaki (Ed.) *Digitally Archiving Cultural Objects*, ISBN 9780387758060, Chapter 8, Springer, pp127–144, 2007.
- [B6] Ryusuke Sagawa, Ko Nishino, Mark D. Wheeler, and Katsushi Ikeuchi, "Parallel Processing of Range Data Merging," Katsushi Ikeuchi and Daisuke Miyazaki (Ed.) *Digitally Archiving Cultural Objects*, ISBN 9780387758060, Chapter 9, Springer, pp147–158, 2007.
- [B7] Ryusuke Sagawa, Ko Nishino, and Katsushi Ikeuchi, "Adaptively Merging Large-Scale Range Data with Reflectance Properties," Katsushi Ikeuchi and Daisuke Miyazaki (Ed.) *Digitally Archiving Cultural Objects*, ISBN 9780387758060, Chapter 10, Springer, pp161–187, 2007.
- [B8] Robby T. Tan, Ko Nishino, and Katsushi Ikeuchi, "Color Constancy through Inverse-Intensity Chromaticity Space," Katsushi Ikeuchi and Daisuke Miyazaki (Ed.) *Digitally Archiving Cultural Objects*, ISBN 9780387758060, Chapter 16, Springer, pp323–349, 2007.
- [B9] Ko Nishino, Yoichi Sato, and Katsushi Ikeuchi, "Eigen-Texture Method: Appearance Compression based on 3D Model," Katsushi Ikeuchi and Yoichi Sato (Ed.) *Modeling from Reality*, ISBN 0792375157, Chapter 6, pp 113–123, 2001.
- [B10] Daisuke Miyazaki, Takeshi Oishi, Taku Nishikawa, Ryusuke Sagawa, Ko Nishino, Takashi Tomomatsu, Yutaka Takase, and Katsushi Ikeuchi, "The Great Buddha Project: Modeling Cultural Heritage through Observation," Katsushi Ikeuchi and Yoichi Sato (Ed.) *Modeling from Reality*, ISBN 0792375157, Chapter 9, pp 171–180, 2001.
- [B11] Katsushi Ikeuchi, Yoichi Sato, Ko Nishino, and Imari Sato, "Photometric Modeling for Mixed Reality," Y. Ohta and H. Tamura (Ed.) *Mixed Reality—Merging Real and Virtual World—*, ISBN 3540656235, Chapter 8, pp 147–163, 1999.

## Journal

- [J1] Geoffrey Oxholm and Ko Nishino, "Shape and Reflectance Estimation in the Wild," *IEEE Trans. on Pattern Analysis and Machine Intelligence*, Vol. 38, No. 2, pp376–389, Feb., 2016.
- [J2] Stephen Lombardi and Ko Nishino, "Reflectance and Illumination Recovery in the Wild," *IEEE Trans. on Pattern Analysis and Machine Intelligence*, Vol. 38, No. 1, pp129–141, Jan., 2016.

- [J3] Prabin Bariya, John Novatnack, Gabriel Schwartz, and Ko Nishino, "3D Geometric Scale Variability in Range Images: Features and Descriptors," *Int'l Journal of Computer Vision*, Vol. 99, No. 2, pp232–255, Sept., 2012.
- [J4] Ko Nishino, Louis Kratz, and Stephen Lombardi, "Bayesian Defogging," *Int'l Journal of Computer Vision*, Vol. 98, No. 3, pp263–278, Jul., 2012.
- [J5] Geoffrey Oxholm and Ko Nishino, "A Flexible Approach to Reassembling Thin Objects of Unknown Geometry," *Journal of Cultural Heritage*, Vol. 14, No. 1, Jan.–Feb., 2013.
- [J6] Louis Kratz and Ko Nishino, "Tracking Pedestrians using Local Spatio-Temporal Motion Patterns in Extremely Crowded Scenes," *IEEE Trans. on Pattern Analysis and Machine Intelligence*, Vol. 34, No. 5, pp987–1002, May, 2012.
- [J7] Kenji Hara and Ko Nishino, "Variational Estimation of Inhomogeneous Specular Reflectance and Illumination from A Single View," *OSA Journal of Optical Society of America A*, Vol. 28, No. 2, pp136–146, Feb., 2011.
- [J8] Ko Nishino and Stephen Lombardi, "A Directional Statistics-based Reflectance Model for Isotropic BRDFs," *OSA Journal of Optical Society of America A*, Vol. 28, No. 1, pp8–18, Jan., 2011.
- [J9] Trip Denton, Ali Shokoufandeh, John Novatnack, and Ko Nishino, "Canonical Subsets of Image Features," *Computer Vision and Image Understanding*, Vol. 112, No. 1, pp55–66, Oct., 2008.
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[C2] Jia Xue, Hang Zhang, Ko Nishino, and Kristin Dana, “Differential Angular Imaging for Material Recognition,” *Proc. of Conference on Computer Vision and Pattern Recognition (CVPR '17)*, Jul., 2017.

[C3] Stephen Lombardi and Ko Nishino “Radiometric Scene Decomposition: Scene Reflectance, Illumination, and Geometry from RGB-D Images,” *Proc. of International Conference on 3D Vision (3DV '16)*, Oct., 2016.

[C4] Yuta Asano, Yinqiang Zheng, Ko Nishino and Imari Sato, “Bispectral Light Absorption for Depth Recovery,” *Proc. of European Conference on Computer Vision (ECCV '16)*, pp635–649, Oct., 2016.

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[C6] Gabriel Schwartz and Ko Nishino, “Automatically Discovering Local Visual Material Attributes,” *Proc. of IEEE Conference on Computer Vision and Pattern Recognition (CVPR '15)*, Jun., 2015. (28.4%)

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### **Refereed Workshop**

[W1] Gabriel Schwartz and Ko Nishino, “Visual Material Traits: Recognizing Per-Pixel Material Context,” *Workshop on Color and Photometry in Computer Vision*, pp1–8, Dec., 2013.

[W2] Geoffrey Oxholm and Ko Nishino, "Aligning Surfaces without Aligning Surfaces," *IEEE Workshop on Applications of Computer Vision*, pp1–8, Jan., 2011.

[W3] Louis Kratz and Ko Nishino, "Spatio-Temporal Motion Pattern Modeling of Extremely Crowded Scenes," in *Proc. of Int'l Workshop on Machine Learning for Vision-based Motion Analysis (at European Conference on Computer Vision ECCV'08)*, pp1–8, Oct., 2008.

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[W8] Yasuyuki Matsushita, Ko Nishino, Katsushi Ikeuchi, and Masao Sakauchi, "Realtime Estimation of Illumination Images Using Illumination Eigenspace," in *Proc. of IAPR Workshop on Machine Vision and Applications (MVA '02)*, pp 447 – 450, Dec., 2002.

[W9] Kenji Hara, Ko Nishino, Atsushi Nakazawa, and Katsushi Ikeuchi, "Estimation of Illumination Position and Reflectance Properties Using Polarization under Perspective Projection," in *Proc. of IAPR Workshop on Machine Vision and Applications (MVA '02)*, pp 556 – 571, Dec., 2002.

### **Theses/Tutorials**

[T1] Ko Nishino, "Re-rendering from a Dense/Sparse Set of Images," in *SIGGRAPH 2002 Course Notes*, Course #44 Notes "Image-Based Modeling", Organized by Radek Grzeszczuk, Session 1, Jul., 2002.

[T2] Ko Nishino, "Photometric Object Modeling - Rendering from a Dense/Sparse Set of Images -," *Ph.D. Thesis, Graduate School of Science, The University of Tokyo*, Mar., 2002.

### **Technical Reports**

[TR1] Jia Xue, Hang Zhang, Kristin Dana, and Ko Nishino, "Differential Angular Imaging for Material Recognition," *arXiv:1612.02372*, Dec., 2016.

[TR2] Gabriel Schwartz and Ko Nishino, "Material Recognition from Local Appearance in Global Context," *arXiv:1611.09394*, Nov., 2016.

[TR3] Stephen Lombardi and Ko Nishino, "Radiometric Scene Decomposition: Scene Reflectance, Illumination, and Geometry from RGB-D Images," *arXiv:1604.01354*, Apr., 2016.

[TR4] Gabriel Schwartz and Ko Nishino, "Discovering Perceptual Attributes in a Deep Local Material Recognition Network," *arXiv:1604.01345*, Apr., 2016.

[TR5] Hang Zhang, Kristin Dana and Ko Nishino, "Friction from Reflectance: Deep Reflectance Codes for Predicting Physical Surface Properties from One-Shot In-Field Reflectance," *arXiv:1603.07998*, Mar., 2016.

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[TR7] Ko Nishino and Stephen Lombardi, "A Directional Statistics-based Reflectance Model for Isotropic BRDFs," *Technical Report, Department of Computer Science, Drexel University, DU-CS-10-06*, Sep., 2010.

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#### **Others**

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