

Lavanya Sharan

Massachusetts Institute of Technology
43 Vassar St, 46-4115C
Cambridge, MA 02139

Cellphone: (617) 324-0284
Email: sharan@alum.mit.edu
Web: http://www.mit.edu/~l_sharan

Education	Massachusetts Institute of Technology Cambridge, MA Ph.D. candidate Department of Electrical Engineering and Computer Science <i>Advisor: Edward H. Adelson</i>	2005-present <i>(Expected Sept 2009)</i>
	Massachusetts Institute of Technology Cambridge, MA S.M. in Electrical Engineering and Computer Science Thesis: Image statistics and the perception of surface reflectance <i>Advisor: Edward H. Adelson</i>	2003-2005
	Indian Institute of Technology Delhi, India B. Tech in Electrical Engineering (GPA 9.66/10.00)	1999-2003
Research Experience	Massachusetts Institute of Technology, Cambridge MA Research Assistant, Perceptual Science Group <i>Advisor: Edward H. Adelson</i> <i>Understanding the visual perception of material properties using psychophysical methods and computational models.</i>	Sept 2003-present
	NTT Communication Sciences Labs, Atsugi, Japan Visiting Researcher, Human and Information Science Lab <i>Advisor: Shin'ya Nishida</i> <i>Conducted psychophysical experiments to study visual perception of albedo and gloss on a high dynamic range display.</i>	March 2006
	Indian Institute of Technology Delhi, India Undergraduate Thesis, Department of Electrical Engineering <i>Advisor: Subhashis Banerjee</i> <i>Developed adaptive background subtraction module for a multiple camera video surveillance setup.</i>	July 2002-May 2003
	University College London, United Kingdom Summer Intern, Gatsby Computational Neuroscience Unit <i>Advisor: Peter Dayan</i> <i>Studied Gaussian probabilistic models as applied to animal conditioning data.</i>	May-July 2002
	Indian Institute of Technology Delhi, India Summer Undergraduate Researcher, Department of Electrical Engineering <i>Advisor: Shiv Dutt Joshi</i>	May-July 2001

Exploring eigenspace representations for object recognition.

National Center for Biological Sciences, Bangalore, India

May-June
2000

Summer Visitor, Computational Neuroscience Laboratory

Advisor: Upinder Singh Bhalla

Modeling the sound localization system of owls using GENESIS simulation software.

Teaching Experience

Teaching Assistant, 6.02 Digital Communication Systems
Massachusetts Institute of Technology, Cambridge MA

Feb-May
2009

Teaching Assistant, 6.002 Electronic Circuits
Massachusetts Institute of Technology, Cambridge MA

Sept-Dec
2004

Mentoring Experience

Supervised undergraduate research assistant *William Yee* in acquiring image databases of material samples.

Sept-Dec
2008

Co-supervised undergraduate research assistant *Aseema Mohanty* in acquiring image databases of material samples and conducting psychophysical studies with those samples.

June-Aug
2008

Co-supervised undergraduate research assistant *Biyeun Buczyk* in acquiring image databases of material samples for psychophysical studies.

Jan 2008

Co-supervised undergraduate research assistant *Cong Luo* in building 3-D material samples for psychophysical studies.

June-Aug
2006

Refereed Publications

1. **Lavanya Sharan**, Yuanzhen Li, Isamu Motoyoshi, Shin'ya Nishida and Edward H. Adelson, Image statistics for surface reflectance perception, *Journal of the Optical Society of America A*, 25(4):846-865, 2008.

2. Isamu Motoyoshi, Shin'ya Nishida, **Lavanya Sharan** and Edward H. Adelson, Image statistics and the perception of surface qualities, *Nature*, 447:206-209, 2007.

3. Yuanzhen Li, **Lavanya Sharan** and Edward H. Adelson, Compressing and companding high dynamic range images with subband architectures, *ACM Transactions on Graphics (SIGGRAPH)*, 24(3), 836-844, 2005.

Conference Presentations

1. **Lavanya Sharan**, Ruth Rosenholtz, Edward H. Adelson, Rapid perception of material properties in natural images. Poster presented at International Conference on Cognitive and Neural Systems (ICCN) Meeting, Boston MA, May 2009.

2. **Lavanya Sharan**, Ruth Rosenholtz, Edward H. Adelson, Material Perception: What can you see in a brief glance? Oral presentation at Vision

Sciences Society Meeting, Naples FL, May 2009.

3. **Lavanya Sharan**, Ruth Rosenholtz, Edward H. Adelson, Rapid visual perception of material properties. Poster presented at Object Perception Attention and Memory (OPAM) Meeting, Chicago IL, November 2008.

4. **Lavanya Sharan**, Ruth Rosenholtz, Edward H. Adelson, Eye movements for material perception. Oral presentation at the Vision Sciences Society Meeting, Naples FL, May 2008.

5. Shin'ya Nishida, Isamu Motoyoshi, Lisa Nakano, Yuanzhen Li, **Lavanya Sharan**, Edward H. Adelson, Do colored highlights look like highlights? Poster presented at the Vision Sciences Society Meeting, Naples FL, May 2008.

6. **Lavanya Sharan**, Edward H. Adelson, Isamu Motoyoshi, Shin'ya Nishida, Non-oriented filters are better than oriented filters for skewness detection. Oral presentation at the European Conference on Visual Perception, Arezzo, Italy, August 2007.

7. **Lavanya Sharan**, Edward H. Adelson, Isamu Motoyoshi, Shin'ya Nishida, Histogram skewness is useful and easily computed. Poster presented at the Vision Sciences Society Meeting, Sarasota FL, May 2007.

8. **Lavanya Sharan**, Yuanzhen Li, Edward H. Adelson, Image statistics for surface reflectance estimation. Oral presentation at the Vision Sciences Society Meeting, Sarasota FL, May 2006.

9. **Lavanya Sharan**, Yuanzhen Li, Edward H. Adelson, Image statistics and reflectance estimation, Oral presentation at the Vision Sciences Society Meeting, Sarasota FL, May 2005.

10. Yuanzhen Li, **Lavanya Sharan**, Edward H. Adelson, Perceptually based range compression for high dynamic range images. Poster presented at the Vision Sciences Society Meeting, Sarasota FL, May 2005.

11. Edward H. Adelson, Yuanzhen Li, **Lavanya Sharan**, Image statistics for material perception. Oral presentation (by Adelson) at the Vision Sciences Society Meeting, Sarasota FL, May 2004.

Honors & Awards

Selected to attend the "Computational Neuroscience: Vision" summer school at Cold Spring Harbor Laboratories, Cold Spring Harbor NY, June 2008.

Awarded the Institute Silver Medal for graduating top of Electrical Engineering class at the Indian Institute of Technology Delhi, August 2003.

Awarded Summer Undergraduate Research Grant by Indian Institute of Technology Delhi, May 2001.

Awarded the Lucent Global Science Scholarship 2000.

Awarded the National Science Talent Scholarship by National Council of Educational Research and Training (NCERT), New Delhi from 1997-2003.

References

1. Edward H. Adelson
John and Dorothy Wilson Professor of Vision Science
Department of Brain and Cognitive Sciences
Massachusetts Institute of Technology
43 Vassar St, 46-4115
Cambridge, MA 02139
(617) 253-0645
adelson@csail.mit.edu
2. Ruth Rosenholtz
Principal Research Scientist
Department of Brain and Cognitive Sciences
Massachusetts Institute of Technology
43 Vassar St, 46-4115
Cambridge, MA 02139
(617) 324-0269
rruth@mit.edu
3. Shin'ya Nishida
Senior Research Scientist
Sensory & Motor Research Group
Human and Information Science Lab, NTT Communication Sciences Labs,
3-1 Morinosato-Wakamiya, Atsugi-shi, 243-0198, Japan
nishida@brl.ntt.co.jp