

AYAN CHAKRABARTI

6045 S. Kenwood Ave. • Chicago, IL 60637 • (617) 922-7435 • ayan@ttic.edu

<http://ttic.uchicago.edu/~ayan/>

RESEARCH INTERESTS

Computer Vision, Computational Photography, Machine Learning, Image Processing.

EDUCATION

- | | | |
|------|---------|--|
| 2011 | Ph.D. | Harvard University , Cambridge, MA
Engineering Sciences
Thesis: Visual Inference with Statistical Models for Color and Texture
Advisor: Todd Zickler |
| 2008 | S.M. | Harvard University , Cambridge, MA
Engineering Sciences |
| 2006 | M.Tech. | Indian Institute of Technology Madras , Chennai, India
Electrical Engineering (Communication Systems) |
| 2006 | B.Tech. | Indian Institute of Technology Madras , Chennai, India
Electrical Engineering |

PROFESSIONAL EXPERIENCE

- | | |
|---------------------|---|
| Sep 2014 - Present | Research Assistant Professor , Toyota Technological Institute, Chicago, IL. |
| Sep 2011 - Aug 2014 | Post-doctoral Fellow , Harvard University, Cambridge, MA. |
| Jun 2007 - Aug 2011 | Graduate Research Assistant , Harvard University, Cambridge, MA. |
| Jun 2009 - Aug 2009 | Research Intern , Advanced Technology Labs, Adobe Systems, Newton, MA. |
| Jun 2004 - Aug 2004 | Research Intern , Industrial Imaging and Modeling Lab, GE Global Research, Bangalore, India. |

REFEREED PUBLICATIONS

Available at <http://ttic.uchicago.edu/~ayan/>

1. Ayan Chakrabarti, "Learning Sensor Multiplexing Design through Back-propagation," **Advances in Neural Information Processing Systems (NIPS)**, 2016.
2. Ayan Chakrabarti, Jingyu Shao, and Gregory Shakhnarovich, "Depth from a Single Image by Harmonizing Overcomplete Local Network Predictions," **Advances in Neural Information Processing Systems (NIPS)**, 2016.
3. Ayan Chakrabarti, and Kalyan Sunkavalli, "Single-image RGB Photometric Stereo With Spatially-varying Albedo," Proc. of **IEEE Intl. Conf. on 3D Vision (3DV)**, 2016. (oral)
4. Ayan Chakrabarti, "A Neural Approach to Blind Motion Deblurring," Proc. of **European Conf. on Computer Vision (ECCV)**, 2016.
5. Ayan Chakrabarti, "Color Constancy by Learning to Predict Chromaticity from Luminance," **Advances in Neural Information Processing Systems (NIPS)**, 2015. (spotlight)
6. Ayan Chakrabarti, Ying Xiong, Steven J. Gortler, and Todd Zickler, "Low-Level Vision by Consensus in a Spatial Hierarchy of Regions," Proc. of **IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)**, 2015.
7. Ying Xiong, Ayan Chakrabarti, Ronen Basri, Steven J. Gortler, David W. Jacobs, and Todd Zickler, "From Shading to Local Shape," **IEEE Trans. on Pattern Analysis and Machine Intelligence (PAMI)**, no. 37, vol. 1, pp. 67-79, 2015.
8. Ayan Chakrabarti, Ying Xiong, Baochen Sun, Trevor Darrell, Daniel Scharstein, Todd Zickler and Kate Saenko, "Modeling Radiometric Uncertainty for Vision with Tone-mapped Color Images," **IEEE Trans. on Pattern Analysis and Machine Intelligence (PAMI)**, no. 36, vol. 11, pp. 2185-2198, 2014.
9. Ayan Chakrabarti, William T. Freeman and Todd Zickler, "Rethinking Color Cameras," Proc. of **IEEE Intl. Conf. on Computational Photography (ICCP)**, 2014.

10. Ayan Chakrabarti and Todd Zickler, "Depth and Deblurring from a Spectrally-varying Depth-of-Field," Proc. of **European Conf. on Computer Vision (ECCV)**, 2012.
11. Ayan Chakrabarti, Keigo Hirakawa and Todd Zickler, "Color Constancy with Spatio-spectral Statistics," **IEEE Trans. on Pattern Analysis and Machine Intelligence (PAMI)**, no. 8, vol. 34, pp. 1509-1519, 2012.
12. Ayan Chakrabarti and Todd Zickler, "Statistics of Real-world Hyperspectral Images," Proc. of **IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)**, 2011.
13. Trevor Owens, Kate Saenko, Ayan Chakrabarti, Ying Xiong, Todd Zickler and Trevor Darrell, "Learning Object Color Models from Multi-view Constraints," Proc. of **IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)**, 2011.
14. Ayan Chakrabarti, Todd Zickler and William T. Freeman, "Analyzing Spatially-varying Blur," Proc. of **IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)**, 2010.
15. Ayan Chakrabarti, Daniel Scharstein and Todd Zickler, "An Empirical Camera Model for Internet Color Vision," Proc. of **British Machine Vision Conference (BMVC)**, 2009.
16. Ayan Chakrabarti, Keigo Hirakawa and Todd Zickler, "Color Constancy Beyond Bags of Pixels," Proc. of **IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)**, 2008.
17. Ayan Chakrabarti and Keigo Hirakawa, "Effective Separation of Sparse and Non-Sparse Image Features for Denoising", Proc. of **The IEEE Conf. on Acoustics, Speech, and Signal Proc. (ICASSP)**, 2008.
18. Ayan Chakrabarti, A.N. Rajagopalan and Rama Chellappa, "Super-resolution of Face Images Using Kernel PCA-Based Prior," **IEEE Trans. on Multimedia**, no. 4, vol. 9, pp. 888-892, 2007.

GRANTS AND GIFTS

- NSF 2016-19, "IIS-1618021: Structured Inference for Low-Level Vision," co-PI (with Todd Zickler, Harvard University). **\$194,612** (TTIC component).
- Adobe Systems Inc. 2014-15, Research collaboration funding, **\$20,500**.
- NVIDIA Corporation 2015, Hardware donation.

TEACHING

GRADUATE COURSES

- Guest Lecturer: **TTIC 31090 - Signals, Systems and Random Processes**, TTI-Chicago, Spring 2015.
- Teaching Fellow: **CS283 - Computer Vision**, Harvard University, Fall 2009.
- Teaching Fellow: **ES251r - Advanced Machine Learning**, Harvard University, Spring 2008.
- Teaching Assistant: **EC 424: Image Signal Processing**, IIT Madras, Spring 2006.

UNDERGRADUATE COURSES

- Teaching Assistant: **EC 206: Principles of Communication**, IIT Madras, Fall 2005.

PROFESSIONAL SERVICE

- Journal Reviews: IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), IEEE Transactions on Image Processing, International Journal of Computer Vision, Journal on Pattern Recognition, Pattern Recognition Letters, IEEE Transactions on Multimedia, SPIE Journal on Electronic Imaging (JEI), IET Computer Vision, Journal of Visual Communication and Image Representation, Image and Vision Computing Journal, IEEE Transactions on Computational Imaging.
- Conference Reviews: ICCP 2013-2016; CVPR 2011-2016; ECCV 2012-2016; ICCV 2011-2015; AAAI 2015; NIPS 2015-16; SIGGRAPH 2014, SIGGRAPH Asia 2014,2016; ACCV 2016.
- Local Arrangements Chair, ICCP 2015.
- Member, IEEE (2007-present).

AWARDS

- Outstanding Reviewer, IEEE Conference on Computer Vision and Pattern Recognition, CVPR (2015).
- Outstanding Reviewer, European Conference on Computer Vision, ECCV (2012).
- Fellowship, Harvard School of Engineering and Applied Sciences (2006-2008).
- Certificate of Merit and Scholarship, Graduate Aptitude Test in Engineering, IIT Madras (2005-2006).
- Best Intern Award, Industrial Imaging and Modeling Lab, GE Global Research, Bangalore (2004).
- National Talent Search Examination (NTSE) Scholarship, National Council of Educational Research and Training (NCERT), India (1999-2006).