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ACADEMIC BACKGROUND

University of California at Berkeley Berkeley, CA
Ph.D., Computer Science, Fall 2005
advisor: Jitendra Malik

California Institute of Technology Pasadena, CA
BS with honor, Engineering and Applied Sciences, Spring 2000
advisor: Pietro Perona

EXPERIENCE

Assistant Professor 2007-
Department of Computer Science, University of California, Irvine, CA.
Joint Faculty Appointment, Department of Biomedical Engineering
Member, Center for Machine Learning and Intelligent Systems
Member, Institute for Genomics and Bioinformatics
Member, Center for Complex Biological Systems
Member, Mathematical, Computational and Systems Biology Program

Postdoctoral Scholar 2005-2007
LBNL Life Sciences/UCB Computer Science, Berkeley, CA Mark Biggin

Graduate Student Researcher 2000-2005
Computer Science, University of California, Berkeley, CA Jitendra Malik

Consultant 1999-2000
Infospheres Corp, Oakland, CA Mani Chandy

Research Intern 1998-1999
NASA Jet Propulsion Laboratory, Pasadena, CA Mike Burl

Research Intern Summers 1995-1997
Plant Sciences, Montana State University, Bozeman, MT Tom Blake

AWARDS AND HONORS

National Science Foundation Graduate Research Fellowship, 2002-2005
University of California MICRO Fellowship, 2000-2001
Caltech Summer Undergraduate Research Fellowship, 1998
Caltech Merit Scholarship, 1996-1998
American Cancer Society Summer Fellowship, 1995

PROFESSIONAL ACTIVITIES

Program committee for IEEE International Conf. on Computer Vision (2007)
Program committee for IEEE Conf. on Computer Vision and Pattern Recognition (2006-2008)
Program committee for European Conf. on Computer Vision (2008)
Program committee for Conf. on Uncertainty in Artificial Intelligence (2008)
Program committee for Conf. on Neural Information Processing Systems (2008)
Reviewer for IEEE Pattern Analysis and Machine Intelligence, Transactions on Neural Networks, Transactions on Signal Processing, Transactions on Image Processing, Transactions on Geoscience and Remote Sensing, Transactions on Circuits and Systems for Video Technology, ACM SIGGRAPH, Journal of Vision, Vision Research, Neural Computation, Pattern Recognition Letters, Machine Learning, Machine Vision and Applications Journal, BMC

Cell Biology, Computer Vision and Image Understanding, Journal of Computer Science and Technology, The Visual Computer, Data Mining and Knowledge Discovery

Co-organizer, “Workshop on Graph Based Image Segmentation”. IEEE Conf. on Computer Vision and Pattern Recognition, June 2004.

NSF Panels: Computer Vision, May 2008.

JOURNAL
PUBLICATIONS

- [J.1] C. Fowlkes, S. Belongie, F. Chung, J. Malik. “Spectral Grouping Using The Nyström Method”, IEEE Transactions on Pattern Analysis and Machine Intelligence 26 (2), p.214-225, 2004.
- [J.2] D. Martin, C. Fowlkes, J. Malik. “Learning to Detect Natural Image Boundaries Using Local Brightness, Color and Texture Cues”, IEEE Transactions on Pattern Analysis and Machine Intelligence, 26 (5) p.530-549, 2004.
- [J.3] C. Luengo-Hendriks, S. Keränen, C. Fowlkes, L. Simirenko, G. Weber, C. Henriquez, D. Kaszuba, B. Hamann, M. Eisen, J. Malik, D. Sudar, M. Biggin D. Knowles, “3D Morphology and Gene Expression in the Drosophila Blastoderm at Cellular Resolution I: Data Acquisition Pipeline”, Genome Biology, 7:R123, 2006.
- [J.4] S. Keränen, C. Fowlkes, C. Luengo Hendriks, D. Sudar, D. Knowles, J. Malik, M. Biggin, “3D Morphology and Gene Expression in the Drosophila Blastoderm at Cellular Resolution II: Dynamics”, Genome Biology, 7:R124, 2006.
- [J.5] C. Fowlkes, D. Martin, J. Malik. “Local Figure/Ground Cues are Valid for Natural Images”, Journal of Vision, 7(8):2, p.1-9, 2007.
- [J.6] G. Weber, O. Rübél, M-Y. Huang, A. DePace, C. Fowlkes, S. Keränen, C. Luengo Hendriks, H. Hagen, D. Knowles, J. Malik, M. Biggin, B. Hamann. “Visual exploration of three-dimensional gene expression using physical views and linked abstract views”, IEEE/ACM Transactions on Computational Biology and Bioinformatics, in press, 2007.
- [J.7] X. Ren, C. Fowlkes, J. Malik, “Learning Probabilistic Models for Contour Completion in Natural Images”, International Journal of Computer Vision, 77(1), p.47-63, 2008.
- [J.8] C. Fowlkes, C. Luengo Hendriks, S. Keränen, G. Weber, O. Rübél, M-Y Huang, S. Chatoor, A. DePace, L. Simirenko, C. Henriquez, A. Beaton, R. Weiszmann, S. Celniker, B. Hamann, D. Knowles, M. Biggin, M. Eisen, J. Malik “A quantitative spatio-temporal atlas of gene expression in the Drosophila blastoderm”, Cell, 133(2), p. 364-374, 2008.
- [J.9] O. Rübél, G. Weber, M-Y Huang, E. Bethel, M. Biggin, C. Fowlkes, C. Luengo Hendriks, S. Keränen, M. Eisen, D. Knowles, J. Malik, H. Hagen, B. Hamann, “Integrating Data Clustering and Visualization for the Analysis of 3D Gene Expression Data”, IEEE/ACM Transactions on Computational Biology and Bioinformatics, in press, 2008.

BOOK CHAPTERS

- [BC.1] C. Fowlkes, Q. Shan, S. Belongie, J. Malik. “Extracting Global Structure from Gene Expression Profiles”, in Methods of Microarray Data Analysis II, S. M. Lin and K. F. Johnson, eds. Kluwer Academic Publishers, 2002.

- [C.1] M. Burl, C. Fowlkes, J. Roden, A. Stechert, and S. Muukhtar, “Diamond Eye: A distributed Architecture for Image Data Mining”, Proc. of SPIE Conference on Data Mining and Knowledge Discovery, 1999
- [C.2] D. Martin, C. Fowlkes, D. Tal, J. Malik. “A Database of Human Segmented Natural Images and its Application to Evaluating Segmentation Algorithms and Measuring Ecological Statistics”, Proc. IEEE Int. Conf. on Computer Vision (ICCV), 2001.
- [C.3] C. Fowlkes, S. Belongie, J. Malik. “Efficient Spatiotemporal Grouping Using the Nyström Method”, Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), 2001.
- [C.4] S. Belongie, C. Fowlkes, F. Chung, J. Malik. “Spectral Partitioning with Indefinite Kernels using the Nyström Extension”, Proc. European Conf. on Computer Vision (ECCV), 2002.
- [C.5] D. Martin, C. Fowlkes, J. Malik. “Learning to Detect Natural Image Boundaries Using Brightness and Texture”, Proc. Neural Information Processing Systems (NIPS), 2002.
- [C.6] C. Fowlkes, D. Martin, J. Malik. “Learning Affinity Functions for Image Segmentation: Combining Patch-based and Gradient-based Approaches”, Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), 2003.
- [C.7] X. Ren, C. Fowlkes, J. Malik. “Scale-Invariant Contour Completion using Conditional Random Fields”, Proc. IEEE Int. Conf. on Computer Vision (ICCV), 2005.
- [C.8] X. Ren, C. Fowlkes, J. Malik. “Cue Integration for Figure/Ground Labeling”, Proc. Neural Information Processing Systems (NIPS), 2005.
- [C.9] O. Rübel, G. Weber, S. Keränen, C. Fowlkes, C. Luengo Hendriks, N.Y. Shah, M.D. Biggin, H. Hagen, D.W. Knowles, J. Malik, D. Sudar and B. Hamann. “PointCloudXplore: Visual Analysis of 3D Gene Expression Data Using Physical Views and Parallel Coordinates”, in Proc. of EuroVis., 2006.
- [C.10] X. Ren, C. Fowlkes, J. Malik. “Figure/Ground Assignment in Natural Images”, Proc. European Conf. on Computer Vision (ECCV), 2006.
- [C.11] M. Maire, P. Arbeláez, C. Fowlkes, J. Malik. “Using Contours to Detect and Localize Junctions in Natural Images”, Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), 2008.

- [A.1] C. W. Fowlkes and C. C. Fowlkes “Passive Solar Contributions to Residential Ventilation”, Conservation in Buildings: Northwest Perspective, Butte, MT (May 1985)
- [A.2] J. Roden, M. Burl, and C. Fowlkes, “The Diamond Eye Image Mining System”, Demo for the Scientific and Statistical Database Management Conf., Cleveland, OH, (June 1999)
- [A.3] M. Burl, C. Fowlkes, J. Roden, “Mining for Image Content”, SCI-ISAS '99 Session on Intelligent Data Mining and Knowledge Discovery, Orlando, FL, (Aug 1999)
- [A.4] D. Martin, C. Fowlkes, J. Malik. “Evaluating Segmentation Algorithms”, Workshop on Perceptual Organization and Computer Vision, Vancouver, (July 2001).
- [A.5] C. Fowlkes, D. Martin, J. Malik. “Understanding Gestalt Cues and Ecological Statistics Using A Database of Human Segmented Images”, Workshop on Perceptual Organization and Computer Vision, Vancouver, (July 2001).
- [A.6] C. Fowlkes, Q. Shan, S. Belongie, J. Malik. “Extracting Global Structure from Gene Expression Profiles”, CAMDA, Duke University, (October 2001).
- [A.7] D. Martin, C. Fowlkes, J. Malik. “Learning to Optimally Detect Image Boundaries Using Brightness, Color and Texture”, VSS, Sarasota, FL, (May 2003). [Journal of Vision, 3(9) p.113]
- [A.8] C. Fowlkes, D. Martin, J. Malik. “Ecological Statistics of Grouping by Similarity”, VSS, Sarasota, FL, (May 2003). [Journal of Vision, 3(9) p.43]

- [A.9] D. Martin, C. Fowlkes, L. Walker, J. Malik. "Local Boundary Detection in Natural Images: Matching Human and Machine Performance", ECVP. Paris, France, (September 2003). [Perception, 32 supp, p. 55]
- [A.10] C. Fowlkes, D. Martin, J. Malik. "On Measuring the Ecological Validity of Local Figure-Ground Cues", ECVP, Paris, France, (September 2003). [Perception, 32 supp, p. 171]
- [A.11] C. Fowlkes, C. Luengo Hendriks, S. Keränen, M. Biggin, D. Knowles, D. Sudar, J. Malik. "Building Composite Maps of Gene Expression Patterns and Morphology: Registering 3D Representations of Drosophila Embryos", 46th Drosophila Research Conference, San Diego, CA, (April 2005).
- [A.12] X. Ren, C. Fowlkes, J. Malik. "Familiar configuration enables figure/ground assignment in natural scenes", VSS, Sarasota, FL, (May 2005).
- [A.13] C. Fowlkes, C. Luengo Hendriks, S. Keränen, M. Biggin, D. Knowles, D. Sudar, J. Malik. "Registering Drosophila Embryos at Cellular Resolution to Build a Quantitative 3D Map of Gene Expression Patterns and Morphology", CSB 2005 Workshop on BioImage Data Mining and Informatics, Palo Alto, CA, (August 2005).
- [A.14] D. Knowles, C. Luengo Hendriks, S. Keränen, C. Fowlkes, G. Weber, O. Rübél, H. Peng, A. DePace, B. Hamann, D. Sudar, M. Eisen, J. Malik M. Biggin, "Berkeley Drosophila transcription network project: 3D blastoderm gene expression atlas" Genome Informatics, Cold Spring Harbor, New York, (Oct. 2005).
- [A.15] G. Weber, O. Rübél, M.-Y. Huang, C. Fowlkes, S. Keränen, C. Luengo Hendriks, M. Biggin, H. Hagen, D. Knowles, J. Malik, D. Sudar, B. Hamann. "Interactive visualization of measured gene expression patterns in three dimensions at cellular resolution" software demonstration at IEEE Visualization 2005, Minneapolis, Minnesota, (Oct. 2005).
- [A.16] O. Rübél, G. Weber, M.-Y. Huang, C. Fowlkes, S. Keränen, C. Luengo Hendriks, M. Biggin, H. Hagen, D. Knowles, J. Malik, D. Sudar, B. Hamann. "Interactive visualization of measured gene expression patterns in three dimensions at cellular resolution" software demonstration at Supercomputing 2005, Seattle, Washington, (Nov. 2005).
- [A.17] S. Keränen, C. Luengo Hendriks, C. Fowlkes, G. Weber, O. Rübél, M.-Y. Huang, L. Simirenko, D. Sudar, B. Hamann, J. Malik, M. Eisen, M. Biggin, D. Knowles. "A morphogenetic framework for analyzing gene expression in Drosophila melanogaster blastoderms," Systems Biology: Global Regulation of Gene Expression, Cold Spring Harbor, New York (March 2006).
- [A.18] C. Luengo Hendriks, S. Keränen, C. Fowlkes, G. Weber, O. Rübél, M.-Y. Huang, H. Peng, A.H. DePace L. Simirenko, B. Hamann, D. Sudar, J. Malik, M. Eisen, M. Biggin, D. Knowles. "Quantitative imaging describes morphogenetic nuclear movements prior to gastrulation," 47th Drosophila Research Conference, Houston, TX, (April 2006).
- [A.19] S. Keränen, C. Luengo Hendriks, C. Fowlkes, G. Weber, O. Rübél, M.-Y. Huang, C. Henriquez, H. Peng, L. Simirenko, D. Sudar, B. Hamann, J. Malik, M. Eisen, M. Biggin, D. Knowles. "A morphogenetic framework for analyzing gene expression in Drosophila melanogaster blastoderms," 47th Drosophila Research Conference, Houston, TX, (April 2006).
- [A.20] C. Fowlkes, C. Luengo Hendriks, S. Keränen, A. DePace, G. Weber, O. Rübél, M.-Y. Huang, L. Simirenko, B. Hamann, M. Eisen, D. Sudar, D. Knowles, M. Biggin, J. Malik, "Complex Interactions Between D/V and A/P Patterning Systems Before Gastrulation Revealed by a 3-D Atlas of Gene Expression Patterns." 47th Drosophila Research Conference, Houston, TX, (April 2006).
- [A.21] S. Keränen, C. Luengo Hendriks, C. Fowlkes, G. Weber, O. Rübél, M.-Y. Huang, L. Simirenko, A. DePace, C. Henriquez, H. Peng, J. Sudar, B. Hamann, J. Malik, M. Eisen, M. Biggin, and D. Knowles, "A morphogenetic framework for analyzing gene expression in Drosophila

melanogaster blastoderms”, Integrating Evolution, Development and Genomics, Berkeley, CA, (May 2006).

- [A.22] A. DePace, S. Keränen, C. Luengo, C. Fowlkes, G. Weber, O. Rübél, M.-Y. Huang, L. Simirenko, B. Hamann, J. Malik, D. Knowles, M. Biggin, M. Eisen, “Building a 3-dimensional atlas of gene expression in multiple *Drosophila* species”, The Biology of Genomes, Cold Spring Harbor, New York, (May 2006).
- [A.23] C. Luengo Hendriks, S. Keränen, C. Fowlkes, G. Weber, M.-Y. Huang, B. Hamann, D. Sudar, J. Malik, M. Biggin, D. Knowles. “Quantitative live imaging describes morphogenetic nuclear movements in early *Drosophila* embryo.” ISAC 2006, Québec City, (May 2006).
- [A.24] O. Rübél, G. Weber, S. Keränen, C. Fowlkes, C. Luengo Hendriks, L. Simirenko, N. Shah, M. Eisen, M. Biggin, H. Hagen, D. Sudar, J. Malik, D. Knowles, and B. Hamann. “Point-CloudXplore: Visual analysis of 3D gene expression data using linked physical and abstract data views”, in Dannenmann, P., Hagen, H. and Kerren, A., eds., Visualization of Large and Unstructured Data Sets, GI Lecture Notes in Informatics, Gesellschaft fuer Informatik, Bonn, Germany, 2006
- [A.25] C. Luengo Hendriks, C. Fowlkes, S. Keränen, L. Simirenko, G. Weber, O. Rübél, M.-Y. Huang, A. DePace, C. Henriquez, X.-Y. Li, H. Chu, D. Kaszuba, Beaton, S. Celniker, B. Hamann, M. Eisen, J. Malik, D. Knowles, M. Biggin, “Virtual embryos as tools for 3-D gene expression analysis”, 48th *Drosophila* Research Conference, Philadelphia, PA, (March 2007).
- [A.26] S. Keränen, C. Luengo Hendriks, C. Fowlkes, L. Simirenko, G. Weber, O. Rübél, M.-Y. Huang, A. DePace, C. Henriquez, X.-Y. Li, H. Chu, D. Kaszuba, A. Beaton, S. Celniker, B. Hamann, M. Eisen, J. Malik, D. Knowles, M. Biggin, Virtual embryos as tools for 3D gene expression analyses, 15th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB), Vienna, Austria, (July 2007).
- [A.27] S. Keränen, C. Luengo Hendriks, C. Fowlkes, L. Simirenko, G. Weber, A. DePace, C. Henriquez, D. Kaszuba, B. Hamann, M. Eisen, J. Malik, D. Sudar, M. Biggin, D. Knowles, Three-dimensional morphology and gene expression in the *Drosophila* blastoderm at cellular resolution, 15th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB), Vienna, Austria, (July 2007).
- [A.28] D. Sudar, C. Luengo Hendriks, C. Fowlkes, S. Keränen, L. Simirenko, G.H. Weber, O. Rübél, M.-Y. Huang, A. DePace, C. Henriquez, X.-Y. Li, H.C. Chu, D. Kaszuba, A. Beaton, S. Celniker, B. Hamann, M. Eisen, J. Malik, D. Knowles, M. Biggin, Imaging and visualization for 3-D gene expression analyses in *Drosophila* embryos, Microscopy and Microanalysis 2007, Fort Lauderdale, FL, (August 2007).
- [A.29] J. Burge, C. Fowlkes, M. Banks. “Configural cues, disparity, and depth perception: internalization of natural scene statistics” ECVF, Arezzo, Italy, (August 2007). [Perception, 36 supp]
- [A.30] O. Rübél, G. Weber, M.-Y. Huang, E. Bethena, S. Keränen, C. Fowlkes, C. Luengo Hendriks, A. DePace, L. Simirenko, M. Eisen, M. Biggin, H. Hagen, J. Malik, D. Knowles and B. Hamann, “PointCloudExplore 2: Visual Exploration of 3D Gene Expression” , to appear in Dannenmann, P., Hagen, H. and Kerren, A., eds., Visualization of Large and Unstructured Data Sets, GI Lecture Notes in Informatics, Gesellschaft fuer Informatik, Bonn, Germany, (Oct. 2007)
- [A.31] C. Fowlkes, C. Luengo Hendriks, S. Keränen, G. Weber, O Rübél, M-Y Huang, L. Simirenko, M. Eisen, B. Hamann, D. Knowles, M. Biggin, J. Malik, “Building a Quantitative Spatio-temporal Atlas of Gene Expression in the *Drosophila* Blastoderm” International Conference on Systems Biology, Long Beach, (Oct. 2007)
- [A.32] D.W. Knowles, C.L. Luengo Hendriks, S.V.E. Keränen, C.C. Fowlkes, A.H. DePace, G.H. Weber, O. Rübél, M.-Y. Huang, B. Hamann, M.B. Eisen, J. Malik and M.D. Biggin, Berkeley

Drosophila Transcription Network Project: Morphology and gene expression atlas, Genome Informatics, Cold Spring Harbor, New York, (Nov. 2007)

- [A.33] C.L. Luengo Hendriks, S.V.E. Keränen, C.C. Fowlkes, A.H. DePace, G.H. Weber, O. Rübél, M.-Y. Huang, B. Hamann, M.B. Eisen, J. Malik, M.D. Biggin and D.W. Knowles, Berkeley Drosophila Transcription Network Project: Morphology and gene expression atlas, Workshop on Bio-Image Informatics: Biological Imaging, Computer Vision and Data Mining, Santa Barbara, California, (Jan. 2008).
- [A.34] S.V.E. Keränen, B.D. Pfeiffer, B. Fisher, A. Hammonds, C.L. Luengo Hendriks, C.C. Fowlkes, C.N. Henriquez, D.W. Knowles, J. Malik, M.B. Eisen, M.D. Biggin and S. Celniker, Quantitative 3D Analysis of Expression Patterns Driven by cis-Regulatory Modules, 49th Annual Drosophila Research Conference, San Diego, California, (April, 2008).
- [A.35] C.L. Luengo Hendriks, S.V.E. Keränen, P. Arbelaez, G.H. Weber, C.C. Fowlkes, C.N. Henriquez, D.W. Kaszuba, B. Hamann, J. Malik, M.D. Biggin and D.W. Knowles, A Morphology and Gene Expression Atlas of Drosophila Embryogenesis, 49th Annual Drosophila Research Conference, San Diego, California, (April, 2008).
- [A.36] J. Gardner, C. Fowlkes, C. Nothelfer, S. Palmer. "Exploring aesthetic principles of spatial composition through stock photography." VSS, Sarasota, FL, (May 2008)
- [A.37] S. V. E. Keranen, C. L. Luengo Hendriks, C. C. Fowlkes, C. N. Henriquez, P. Arbelaez, M. Eisen, J. Malik, M. D. Biggin, D. W. Knowles. "Virtual embryos as a tool for computational histology and expression analyses", IEDG, 2008, Berkeley, CA (May 2008)
- [A.38] C. Fowlkes, A. DePace, S. V.E. Keränen, C. L. Luengo Hendriks, D. Knowles, J. Malik, M. Biggin, M. Eisen, "Phenotype alignment and regulatory modeling using a spatiotemporal atlas of gene expression", Genome Informatics, Hinxton, UK (Sept. 2008)
- [A.39] A. DePace, C. Fowlkes, C. Luengo, S. Keränen, C. Henriquez, L. Simirenko, G. Weber, O. Rübél, M-Y Huang, J. Malik, D. Knowles, M. Biggin, M. Eisen "A cellular resolution atlas of gene expression in Drosophila pseudoobscura reveals interspecies variation in embryonic patterning." American Society for Cell Biology 48th Annual Meeting, San Fransisco, CA (Dec. 2008)

TECHNICAL REPORTS

- [TR.1] C. Fowlkes "Surveying Shape Spaces", (Nov 2003)
- [TR.2] C. Fowlkes, J. Malik. "How Much Does Globalization Help Segmentation?", Technical Report CSD-04-1340, Division of Computer Science, University of California, Berkeley, (July 2004).
- [TR.3] C. Fowlkes "A Note on Planar Factor Graphs", (Oct 2004)
- [TR.4] X. Ren, C. Fowlkes, J. Malik. "Mid-level Cues Improve Boundary Detection", Technical Report CSD-05-1382, Division of Computer Science, University of California, Berkeley, (March 2005).
- [TR.5] C. Fowlkes, J. Malik. "Inferring nuclear movements from fixed material", Technical Report EECS-2006-142, EECS Department, University of California, Berkeley, (November 2006).

PRESS COVERAGE

- [PC.1] L. Flintoft, "Developmental networks in time and space", Nature Reviews Genetics 8, 88-89, Feb 2007
- [PC.2] F. Frankel, "Expressing Genes", American Scientist, 95, p 69-71, Jan-Feb 2007
- [PC.3] M. Philips, "Deciphering Development: Quantifying Gene Expression through Imaging", BioScience 57:648-652, September 2007

- [PC.4] E. E. M. Furlong, "A Topographical Map of Spatiotemporal Patterns of Gene Expression", *Developmental Cell*, 14(5), p 639-640, May 2008
- [PC.5] N. de Souza, "A map for fly explorers", *Nature Methods*, 5(6), p 466, June 2008

INVITED
TALKS

- "Building composite spatial maps of gene expression in *Drosophila* embryos", Caltech, Vision Group, March 2005
- "Perceptual organization and linear algebra", MSRI, PREP teaching workshop on mathematics of images, March 2005
- "Learning to detect boundaries in natural scenes", UCSD, Computer Science, March 2005
- "Perceptual organization and natural scenes", MSRI, Workshop on perceptual organization, April 2005
- "Learning to detect boundaries in natural scenes", CMU, Robotics Inst. June 2005
- "Learning to detect boundaries in natural scenes", U Penn, Computer Science, June 2005
- "Ecological statistics and perceptual organization", US-China Workshop on Mathematical, Computational, and Applied Aspects of Computer Vision and Pattern Recognition, Lotus Hill Research Institute, E-Zhou, China, Sept. 2005.
- "Constructing a quantitative spatiotemporal atlas of gene expression and morphology in *Drosophila*", Caltech, Center for Advanced Computing Research, Jan. 2007
- "Ecological statistics and perceptual organization", UC Merced, Mind, Technology, and Society Seminar, Feb. 2007
- "Constructing a quantitative spatiotemporal atlas of gene expression and morphology in *Drosophila*", UCSD, Computer Science, Feb. 2007
- "Computer vision for natural scenes and biological images", UC Irvine, March 2007
- "Constructing a quantitative spatiotemporal atlas of gene expression and morphology in *Drosophila*", U Penn, Computer Science, March 2007
- "Learning to detect boundaries in natural scenes", GIIF Geolunch Seminar, UC Berkeley, October 2007
- "A spatio-temporal atlas of gene expression in the *Drosophila* blastoderm", UCI Developmental Biology Center Retreat, March 2008
- "A spatio-temporal atlas of gene expression in the *Drosophila* blastoderm", UCI Center for Complex Biological Systems Retreat, March 2008
- "The Ecological Statistics of Figure-Ground", Caltech, Vision Group, May 2008

IN PREPARATION

- J. Burge, C. Fowlkes, M. Banks, "Natural-scene statistics predict the influence of the figure-ground cue of convexity on human depth perception", submitted to *Nature Neuroscience*