PIOTR DOLLÁR

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Education

UNIVERSITY OF CALIFORNIA, SAN DIEGO — San Diego, CA
Ph.D. in Computer Science, 2007.
Dissertation: *Learning from Local Image Regions*

HARVARD UNIVERSITY — Cambridge, MA
S.M. (Master of Science) in Computer Science, 2002.
A.B. Cum Laude in Computer Science, 2002.

Research Experience

FACEBOOK ARTIFICIAL INTELLIGENCE RESEARCH — Menlo Park, CA
Research Scientist. Sept. 2014 - present.

MICROSOFT RESEARCH — Redmond, WA
Researcher. Nov. 2011 - Sept. 2014.

ANCHOVI LABS — Pasadena, CA
Cofounder [acquired by Dropbox in 2012]. July 2010 - Oct. 2011.

CALIFORNIA INSTITUTE OF TECHNOLOGY — Pasadena, CA
Postdoctoral Fellow, Senior Postdoctoral Fellow. Sept. 2007 - Oct. 2011.

TANDENT VISION SCIENCE — San Francisco, CA
Consultant. June 2006 - March 2007.

SIEMENS CORPORATE RESEARCH — Princeton, NJ
Intern under Zhuowen Tu, Integrated Data Systems Dept. Summer 2005.

UNIVERSITY OF CALIFORNIA, SAN DIEGO — San Diego, CA
Graduate Student Researcher under Serge Belongie. Feb. 2004 - Sept. 2007.

UNIVERSITY OF MICHIGAN — Ann Arbor, MI
Research Assistant under Marshall Van Alstyne. June 2000 - Sept. 2002.

ARGONNE NATIONAL LABORATORY — Argonne, IL
Research Assistant under James Jorgensen. Summer 1999.

Teaching Experience

CALIFORNIA INSTITUTE OF TECHNOLOGY — Pasadena, CA
CS148 - *Selected Topics in Computational Vision* Spring 2010: Guest Lecturer

UNIVERSITY OF CALIFORNIA, SAN DIEGO — San Diego, CA
CSE150 - *Artificial Intelligence* Winter 2004: Teaching Assistant
CSE166 - *Image Processing* Fall 2003, Fall 2004: Teaching Assistant; Guest Lecturer

HARVARD UNIVERSITY — Cambridge, MA
CS181 *Intelligent Machines* Spring 2002: Teaching Fellow

SUPERVISED STUDENTS
Yi Wang: Undergraduate thesis, 2008; *Asif Khan, Justin Johnson*: Summer Undergraduate Research Fellowship, 2010; *Dennis Park, Joseph Lim*: MSR 2012; *Bharath Hariharan, Aditya Khosla, Tsung-Yi Lin*: MSR 2013; *Saurabh Gupta, Samuel Schulter*: MSR 2014.

Professional Activities

Reviewer: Computer Vision and Pattern Recognition (CVPR), International Conf. on Computer Vision (ICCV), European Conf. on Computer Vision (ECCV), Neural Information Processing Systems (NIPS), British Machine Vision Conf. (BMVC), Pattern Analysis and Machine Intelligence (PAMI), International Journal of Computer Vision (IJCV), Machine Vision and Applications Journal (MVA), Journal of Machine Learning Research (JMLR).

Committees: CVPR 2015 Area Chair; CVPR 2014 Area Chair; ICCV 2013 Computer-Vision for Vehicle Technology: From Earth to Mars [Judge]; ICCV 2013 Large Scale Visual Commerce [Panelist]; ICCV 2013 ImageNet Large Scale Visual Recognition Challenge 2013 [Panelist]; CVPR 2013 SUNw: Scene Understanding Workshop [PC]; CVPR 2011 Workshop on Human Activity Understanding from 3D Data [PC]; ECCV 2010 International Workshop on Sign Gesture Activity [PC]; CVPR 2010 Workshop on Advancing Computer Vision with Humans in the Loop [PC]; CVPR 2009 International Workshop on Visual Scene Understanding [Panelist]; Siemens Competition in Math, Science and Technology 2009, 2010 [Judge].

Software

Piotr's Image & Video Matlab Toolbox: open source computer vision library with emphasis on recognition. Approximately **50,000** *unique* visitors in 2008-2013 ($\sim$**400,000** page views). Available at: `http://vision.ucsd.edu/~pdollar/toolbox/doc/index.html`

Other open source toolboxes: Behavior Recognition Toolbox, Locally Smooth Manifold Learning Toolbox, Cascaded Pose Regression Toolbox, Structured Edge Detection Toolbox. Available at: `http://vision.ucsd.edu/~pdollar/research.html`

Seminars

"Supervised Learning of Edges and Object Boundaries," UMD, April 2007; Johns Hopkins, April 2007; Caltech, April 2007; Applied Physics Laboratory, April 2007; CMU, April 2007. "Locally Smooth Manifold Learning," UCLA, Feb. 2008. "Multiple Component Learning for Object Detection," UC Irvine, Oct. 2008; EPFL Sep. 2009. "Pedestrian Detection: The State of the Art," Jet Propulsion Laboratory, March 2009; UC Irvine, Oct. 2009; Microsoft Research, July 2010; Intel Labs Seattle, July 2010. "The Fastest Pedestrian Detector in the West," UC Irvine, Oct. 2010; Caltech May 2010. "Towards a Trainable Animal Tracking System," HHMI Janelia Farm, Nov. 2010. "Detection and Tracking," Berkeley, Feb. 2011. "Object-Centered Visual Recognition," Microsoft, March 2011; U. Washington, May 2012. "Structured Forests for Fast Edge Detection," Stanford, Nov. 2013, ICCV Dec. 2013.

Publications

Remark: All citation counts, when available, were obtained via Google Scholar on 04/2014. For recent publications please see `http://vision.ucsd.edu/~pdollar/publications.html`.

B. Hariharan, C. Zitnick, P. Dollár, "Detecting Objects using Deformation Dictionaries," *Computer Vision and Pattern Recognition* (CVPR), 2014.

A. Falkner, P. P. Dollár, P. Perona, D. Anderson, and D. Lin, "Decoding ventromedial hypothalamic neural activity during male mouse aggression" *Journal of Neuroscience*, 2014.

P. Dollár, R. Appel, S. Belongie and P. Perona, "Fast Feature Pyramids for Object Detection," *Pattern Analysis and Machine Intelligence* (PAMI), 2014.

P. Dollár and C. Zitnick, "Structured Forests for Fast Edge Detection," *International Conference on Computer Vision* (ICCV), 2013.

X. P. Burgos-Artizzu, P. Perona and P. Dollár, "Robust Face Landmark Estimation Under Occlusion," *International Conference on Computer Vision* (ICCV), 2013.

X. P. Burgos-Artizzu, D. Hall, P. Perona and P. Dollár, "Merging Pose Estimates Across Space and Time," *British Machine Vision Conference* (BMVC), 2013.

J. Lim, C. Zitnick and P. Dollár, "Sketch Tokens: A Learned Mid-level Representation for Contour and Object Detection," *Computer Vision and Pattern Recognition* (CVPR), 2013.

D. Park, C. Zitnick, D. Ramanan and P. Dollár, "Exploring Weak Stabilization for Motion Feature Extraction," *Computer Vision and Pattern Recognition* (CVPR), 2013.

R. Appel, T. Fuchs, P. Dollár and P. Perona, "Quickly Boosting Decision Trees - Pruning Underachieving Features Early," *International Conference on Machine Learning* (ICML), 2013.

P. Dollár, R. Appel and W. Kienzle, "Crosstalk Cascades for Frame-Rate Pedestrian Detection," *European Conference on Computer Vision* (ECCV), 2012 [**30** citations].

X.P. Burgos-Artizzu, P. Dollár, D. Lin, D.J. Anderson and P. Perona, "Social Behavior Recognition in Continuous Videos," *Computer Vision and Pattern Recognition* (CVPR), 2012 [**23** citations].

X.P. Burgos-Artizzu, P. Dollár, A. Ribeiro and P. Perona, "Real-time weed/crop discrimination through fast direct image registration," *Robotics and Associated High-Technologies and Equipment for Agriculture* (RHEA), 2012.

P. Dollár, C. Wojek, B. Schiele and P. Perona, "Pedestrian Detection: An Evaluation of the State of the Art," *Pattern Analysis and Machine Intelligence* (PAMI), 2012 [**307** citations].

B. Babenko, N. Verma, P. Dollár and S. Belongie, "Multiple Instance Learning with Manifold Bags," *International Conference on Machine Learning* (ICML), 2011 [**17** citations].

D. Lin, M. Boyle, P. Dollár, H. Lee, P. Perona, E. Lein and D. Anderson, "Functional identification of an aggression locus in the mouse hypothalamus," *Nature*, 2011 [**143** citations].

C. Hsu, P. Dollár, D. Chang and A. Steele, "Daily timed sexual interaction induces moderate anticipatory activity in mice," *PLoS ONE*, 2010 [**8** citations].

P. Dollár, S. Belongie and P. Perona, "The Fastest Pedestrian Detector in the West," *British Machine Vision Conference* (BMVC), 2010 [**136** citations].

P. Dollár, P. Welinder and P. Perona, "Cascaded Pose Regression," *Computer Vision and Pattern Recognition* (CVPR), 2010 [**39** citations].

P. Dollár, Z. Tu, P. Perona and S. Belongie "Integral Channel Features," *British Machine Vision Conference* (BMVC), 2009 [**149** citations].

P. Dollár, C. Wojek, B. Schiele and P. Perona, "Pedestrian Detection: a Benchmark," *Computer Vision and Pattern Recognition* (CVPR), 2009 [**341** citations].

P. Dollár, B. Babenko, S. Belongie, P. Perona and Z. Tu, "Multiple Component Learning for Object Detection," *European Conference on Computer Vision* (ECCV), 2008 [**98** citations].

B. Babenko, P. Dollár, Z. Tu and S. Belongie, "Simultaneous Learning and Alignment: Multi-Instance and Multi-Pose Learning," *European Conference on Computer Vision: Faces in Real-Life Images* (ECCV Faces), 2008 [**54** citations].

Z. Tu, K. L. Narr, P. Dollár, I. Dinov, P. M. Thompson and A. W. Toga, "Brain Anatomical Structure Parsing by Hybrid Discriminative/Generative Models," *Transactions on Medical Imaging* (TMI), 2008 [**114** citations].

D.S. Touretzky, A.S. Gupta, M.C. Fuhs, P. Dollár, A.P. Maurer and B.L. McNaughton, "Reconstructing Topologies of Hippocampal Cogn. Maps," *Society for Neuroscience* (SFN), 2007.

B. Babenko, P. Dollár and S. Belongie, "Task Specific Local Region Matching," *International Conference on Computer Vision* (ICCV), 2007 [**24** citations].

P. Dollár, V. Rabaud and S. Belongie, "Non-Isometric Manifold Learning: Analysis and an Algorithm," *International Conference on Machine Learning* (ICML), 2007 [**44** citations].

P. Dollár, Z. Tu, H. Tao and S. Belongie, "Feature Mining for Image Classification," *Computer Vision and Pattern Recognition* (CVPR), 2007 [**121** citations].

P. Dollár, V. Rabaud and S. Belongie, "Learning to Traverse Image Manifolds," *Neural Information Processing Systems* (NIPS), 19, 2006 [**27** citations].

P. Dollár, Z. Tu and S. Belongie, "Supervised Learning of Edges and Object Boundaries," *Computer Vision and Pattern Recognition* (CVPR), 2006 [**222** citations].

P. Dollár, V. Rabaud, G. Cottrell and S. Belongie, "Behavior Recognition via Sparse Spatio-Temporal Features," *International Conf. on Computer Vision - Visual Surveillance and Performance Evaluation of Tracking and Surveillance* (ICCV VS-PETS), 2005 [**1351** citations].

S. Belongie, K. Branson, P. Dollár and V. Rabaud, "Monitoring Animal Behavior in the Smart Vivarium," *Measuring Behavior*, 2005 [**30** citations].

P. Dollár, P. Laskowski and M. Van Alstyne, "Simulating the Growth and Diffusion of Knowledge in Agent Societies," *Comp. Analysis of Social and Organization Systems* (CASOS), 2002.

O. Chmaissem, J. Jorgensen, H. Shaked, P. Dollár and J. Tallon, "Crystal and magn. structure of ferromagnetic superconducting $RuSr_2GdCu_2O_8$," *Physics Review B*, 2000 [**259** citations].

Updated: October, 2014.