

Resources and Other Reading (CS598 Spring'09 Hoiem)

Related Classes

Some ideas for reading were drawn from these (listed in no meaningful order).

You might also find project or dataset ideas from these pages (e.g., <http://www.cs.cmu.edu/~efros/courses/LBMV07/databases.htm>).

Kristin Grauman (Spring 2007):

<http://www.cs.utexas.edu/~grauman/courses/spring2007/395T/schedule.htm>

Lana Lazebnik (Fall 2007): <http://www.cs.unc.edu/~lazebnik/research/fall07/#papers>

Antonio Torralba (Fall 2008): <http://people.csail.mit.edu/torralba/courses/6.870/6.870.recognition.htm>

Alyosha Efros (Fall 2007): <http://www.cs.cmu.edu/~efros/courses/LBMV07/>

Greg Mori (Fall 2007): <http://www.cs.sfu.ca/~mori/courses/cmpt882/>

Reviewing

You may find this paper on the task of a referee interesting/useful.

http://www.cs.sfu.ca/~mori/courses/cmpt882/papers/smith_taskofreferee.pdf

Expanded Reading List

Here is a longer list of papers, which contain papers that were considered but may not have been included in the final reading list.

Material recognition

Ted Adelson, "On Seeing Stuff: The Perception of Materials by Humans and Machines", 2001. *Proceedings of the SPIE Vol. 4299, pp. 1-12, Human Vision and Electronic Imaging VI*, B. E. Rogowitz; T. N. Pappas; Eds.

http://www-bcs.mit.edu/people/adelson/pub_pdfs/adelson_spie_01.pdf

Feature sharing

Opelt, A. , Pinz, A. and Zisserman, A.

Learning an Alphabet of Shape and Appearance for Multi-Class Object Detection
International Journal of Computer Vision (2008)

<http://www.robots.ox.ac.uk/~vgg/publications/papers/opelt08.pdf>

Object recognition

Chum, O. and Zisserman, A.

An Exemplar Model for Learning Object Classes

Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (2007)

<http://www.robots.ox.ac.uk/~vgg/publications/papers/chum07a.pdf>

Object/material recognition

J. Shotton, M. Johnson, R. Cipolla.

Semantic Texton Forests for Image Categorization and Segmentation.

In Proc. IEEE CVPR 2008.

<http://jamie.shotton.org/work/publications/cvpr08.pdf>

J. Shotton, J. Winn, C. Rother, A. Criminisi.

TextonBoost for Image Understanding: Multi-Class Object Recognition and Segmentation by Jointly Modeling Texture, Layout, and Context.

To appear in *IJCV*.

<http://jamie.shotton.org/work/publications/ijcv07a.pdf>

Features

David G. Lowe, "Distinctive image features from scale-invariant keypoints," *International Journal of Computer Vision*, 60, 2 (2004), pp. 91-110.

<http://www.cs.ubc.ca/~lowe/papers/ijcv04.pdf>

Grasping/manipulation

Robotic Grasping of Novel Objects, Ashutosh Saxena, Justin Driemeyer, Justin Kearns, and Andrew Y. Ng. *Neural Information Processing Systems (NIPS 19)*, 2007.

<http://www.cs.stanford.edu/people/ang//papers/nips06-graspingnovelobjects.pdf>

Scene interpretation

Zhuowen Tu, Xiangrong Chen, Alan Yuille, and Song-Chun Zhu, "Image Parsing: Segmentation, Detection, and Object Recognition", *9th IEEE International Conf. on Computer Vision (ICCV)*, Oct. 2003 ([pdf](#)).

<http://www-cse.ucsd.edu/classes/fa06/cse252c/>

Features/recognition

[Object recognition with features inspired by visual cortex](#) T. Serre, L. Wolf, and T. Poggio

Action recognition

[Behavior Recognition via Sparse Spatio-Temporal Features](#) Dollár, Rabaud, Cottrell, Belongie

<http://www-cse.ucsd.edu/users/gary/pubs/dollar-vs-pets05.pdf>

Navigation and mapping

[Vision-based mobile robot localization and mapping using scale-invariant features](#) Se, Lowe and Little.

ICRA 2001

Face recognition

[Sinha, P., Balas, B.J., Ostrovsky, Y., & Russell, R. Face recognition by humans: 20 results all computer vision researchers should know about. \(under review\)](#)

Object recognition

[P. Felzenszwalb and D. Huttenlocher. Efficient Matching of Pictorial Structures. CVPR 2000.](#)

[Scalable recognition with a vocabulary tree.](#)

David Nister and Henrik Stewenius.

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), volume 2, pages 2161-2168, June 2006.

Segmentation

[D. Martin, C. Fowlkes, and J. Malik. Learning to Detect Natural Image Boundaries..., PAMI 2004](#)

Segmentation, Object Discovery

[Russell, B. C. , Efros, A. A. , Sivic, J. , Freeman, W. T. and Zisserman, A. Using Multiple Segmentations to Discover Objects and their Extent in Image Collections. CVPR 2006](#)

Feature sharing, transfer learning

[E. Bart, S. Ullman. Cross-generalization: learning novel classes from a single example by feature replacement. CVPR, 2005.](#)

[Torralba, A., Murphy, K. and Freeman, W. Sharing Features: Efficient Boosting Procedures for Multiclass Object Detection. CVPR 2004](#)

[A. Opelt, A. Pinz, and A. Zisserman. Incremental learning of object detectors using a visual shape alphabet. CVPR 2006.](#)

[Z. Tu, X. Chen, A. Yuille, and S-C. Zhu. Image Parsing: Unifying Segmentation, Detection, and Object Recognition. IJCV 2005.](#)

Caruana, R. (1997). Multitask learning: A knowledge-based source of inductive bias. Machine Learning, 28:41--75. <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.57.3196>

Thrun, S. (1996). Is learning the n-th thing any easier than learning the first?. In Advances in Neural Information Processing Systems 8, pp. 640--646. MIT Press.
<http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.44.2898>

Tracking people, pose estimation

Deva Ramanan, David A. Forsyth, and Andrew Zisserman, "Strike a Pose: Tracking People by Finding Stylized Poses", CVPR 2005. [\[pdf\]](#)

Place recognition

Antonio Torralba, Kevin Murphy, William Freeman, Mark Rubin, "Context-based vision system for place and object recognition", ICCV 2003. [\[pdf\]](#)

Describing images

Pinar Duygulu, Kobus Barnard, Nando de Freitas, and David Forsyth, "Object recognition as machine translation: Learning a lexicon for a fixed image vocabulary", ECCV 2002. [\[pdf\]](#)

Action recognition

A.A. Efros, A.C. Berg, G. Mori and J. Malik, Recognizing Action at A Distance, *IEEE International Conference on Computer Vision*, 2003. [\[pdf\]](#)

A. Bobick and J. Davis, The Representation and Recognition of Action Using Temporal Templates, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2001. [\[pdf\]](#)