

Andrea Vedaldi

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Research Interests

Visual object detection, image classification, large scale machine learning and kernel methods.

Professional experience

University of Oxford, Research Fellow
Oxford, UK, since 8/08
Affiliated with the Visual Geometry Group of Andrew Zisserman

Education

University of California at Los Angeles, Doctor of Philosophy
Los Angeles, California, 5/05–6/08
Thesis: “Invariant representations and learning for computer vision”
Committee: Alan Yuille, Song-Chun Zhu, Luimin Vese, Serge Belongie, Stefano Soatto (chair)

University of California at Los Angeles, Master of Science
Los Angeles, California, 7/03–5/05
G.P.A. 4/4
Advisor: Stefano Soatto

University of Padua, Laurea in Ingegneria Informatica
Padua, Italy, 9/98–4/03
Thesis: “Modelli setocastici per il riconoscimento di sistemi di gesti complessi”
Highest honors
Advisor: Ruggero Frezza

Awards

Winner of the “ACM Multimedia Open Source Software Competition” for VLFeat, with Brian Fulkerson, at the ACM international conference on Multimedia, 2010.

Winner of the “PASCAL Visual Object Classification Challenge” for object detection, with V. Gulshan, M. Varma, and A. Zisserman, at the International Conference on Computer Vision (ICCV), 2009.

“Outstanding Doctor of Philosophy in Computer Science,” *The Henry Samueli School of Engineering and Applied Science, University of California – Los Angeles*, 2008.

“Outstanding Master of Science in Computer Science,” *The Henry Samueli School of Engineering and Applied Science, University of California – Los Angeles*, 2005.

Professional activities

Tutorial on “VLFeat: An Open and Portable Library of Computer Vision Algorithms” at the European Conference on Computer Vision (ECCV), 2010.

Tutorial on “VLFeat: An Open and Portable Library of Computer Vision Algorithms”, with Brian Fulkerson, at the IEEE international conference on Computer Vision and Pattern Recognition (CVPR), 2010.

Area Chair for the International Conference on Computer Vision (ICCV) 2011.

Reviewer for the following international conferences: IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2005–2011, European Conference on Computer Vision (ECCV) 2006,2008,2010, International Conference on Computer Vision (ICCV) 2005,2007,2009, Conference on Neural Information Processing Systems (NIPS) 2007–10.

Reviewer for the following international journals: IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), IEEE Transactions on Image Processing (TIP), Computer Vision and Image Understanding (CVIU), International Journal on Computer Vision (IJCV).

Reviewer for the following national conferences: Indian Conference on Computer Vision, Graphics & Image Processing (ICCVGP).

Supervised students

Mayank Juneja

MSc student, Indian Institute of Information Technology - Hyderabad (2009–present)
Co-supervised with C. V. Jawahar and Andrew Zisserman

Omkar Parkhi

MSc student, Indian Institute of Information Technology - Hyderabad (2008–present)
Co-supervised with C. V. Jawahar and Andrew Zisserman

Vempati Sreekanth

MSc, Indian Institute of Information Technology - Hyderabad (2010)
Co-supervised with C. V. Jawahar and Andrew Zisserman

John Cant

MEng, University of Oxford (2010–present)
Co-supervised with Andrew Zisserman

Teaching experience

University of Oxford, 4th year Undergraduate Lectures on Computer Vision, Spring 2009. 4th year Example Classes on Computer Vision, 2009–2010.

University of California at Los Angeles, Teaching Assistant, Computer Graphics, Spring 2005.

Software projects

Main author of the VLFeat library of computer vision algorithms (<http://www.vlfeat.org/>). The library is a popular tool for fast prototyping in computer vision research.

Presentations

A. Vedaldi, “Multiple kernels for Object Classification and Detection”, invited tutorial at the Indian Institute of Information Technology (IIIT) - Hyderabad, 2009.

A. Vedaldi, “The design and implementation of the SIFT feature detector and descriptor”, invited tutorial at the Indian Institute of Information Technology (IIIT) - Hyderabad, 2009.

Publications

Remark. *The major computer vision publication avenues are ICCV, ECCV, CVPR, and NIPS (acceptance rates: oral < 10%, poster < 30%). CiteSeer ranks ICCV and ECCV respectively in the top 5% and 7% of all computer science journals and conferences.*

M. B. Blaschko and A. Vedaldi and A. Zisserman “Simultaneous Object Detection and Ranking with Weak Supervision”, in *Advances in Neural Information Processing Systems (NIPS) 23*, 2010

V. Sreekanth, A. Vedaldi, C. V. Jawahar, and A. Zisserman, “Generalized RBF feature maps for efficient detection,” in *Proceedings of the British Machine Vision Conference (BMVC)* (oral presentation), 2010

A. Vedaldi, H. Ling, and S. Soatto, “Knowing a Good Feature When You See It: Ground Truth and Methodology to Evaluate Local Features for Recognition”, in R. Cipolla, S. Battiato, and G. M. Farinella, editors, *Computer Vision: Detection, Recognition and Reconstruction*, 285, 27–49, Springer, 2010.

A. Vedaldi and A. Zisserman, “Efficient Additive Kernels via Explicit Feature Maps”, in *Proceedings of the IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2010.

A. Vedaldi and A. Zisserman “Structured regression for detection with partial truncation”, in *Advances in Neural Information Processing Systems (NIPS) 22*, pp. 1928–1936, 2009

A. Vedaldi, V. Gulshan, M. Varma and A. Zisserman “Multiple Kernels for Object Detection”, in *Proceedings of the International Conference on Computer Vision (ICCV)*, 2009.

B. Fulkerson, A. Vedaldi and S. Soatto “Class Segmentation and Object Localization with Superpixel Neighborhoods”, in *Proceedings of the International Conference on Computer Vision (ICCV)*, 2009.

B. Fulkerson, A. Vedaldi and S. Soatto “Localizing Objects with Smart Dictionaries”, in *European Conference on Computer Vision (ECCV)*, vol. 1, pp. 179–192, 2008.

A. Vedaldi and S. Soatto “Quick Shift and Kernel Methods for Mode Seeking”, in *European Conference on Computer Vision (ECCV)*, vol. 4, pp. 705–718, 2008.

A. Vedaldi “Invariant Representation and Learning for Computer Vision,” *Ph.D. Thesis, University of California at Los Angeles (UCLA)*, 2008.

A. Vedaldi and S. Soatto, “Relaxed Matching Kernels for Object Recognition,” in *Proceedings of the IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2008.

A. Vedaldi and S. Soatto, “Joint Alignment up to (Lossy) Transformations,” in *Proceedings of the IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2008.

A. Vedaldi, P. Favaro, and E. Grisan, “Boosting Invariance and Efficiency in Supervised Learning,” in *Proceedings of the International Conference on Computer Vision (ICCV)*, 2007 (oral presentation).

A. Rabinovich, A. Vedaldi, C. Galleguillos, E. Wiewiora, and S. Belongie, “Objects in Context,” in *Proceedings of the International Conference on Computer Vision (ICCV)*, 2007 (oral presentation).

E. Jones, A. Vedaldi and S. Soatto, “Inertial structure from motion with autocalibration”, in *Proceedings of the ICCV Workshop on Dynamical Vision*, 2007.

A. Vedaldi, G. Guidi, and S. Soatto, “Moving Forward in Structure From Motion,” in *Proceedings of the IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2007.

- A. Vedaldi and S. Soatto, "A Complexity-Distortion Approach to Joint Pattern Alignment," in *Advances in Neural Information Processing Systems (NIPS) 19*, pp. 1425–1432, 2007.
- A. Vedaldi and S. Soatto, "Local Features, All Grown Up," in *Proceedings of the IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, vol. 2, pp. 1753-1760, 2006 (oral presentation).
- A. Vedaldi and S. Soatto, "Viewpoint Induced Deformation Statistics and the Design of Viewpoint Invariant Features: Singularities and Occlusions," in *Proceedings of the European Conference on Computer Vision (ECCV)*, vol. 2, pp. 374, 2006.
- A. Vedaldi and S. Soatto, "Features for recognition: Viewpoint invariance for non-planar scenes," in *Proceedings of the International Conference on Computer Vision (ICCV)*, vol. 2, pp. 1474–1481, 2005 (oral presentation).
- A. Vedaldi, H. Jin, P. Favaro, and S. Soatto, "KALMANSAC: Robust filtering by consensus," in *Proceedings of the International Conference on Computer Vision (ICCV)*, vol. 1, pp. 633–640, 2005.