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PREVIOUS EMPLOYMENT

Postdoctoral Researcher, January 2009 - December 2011
Supervisor: Prof. Daphne Koller
Stanford University, Stanford, USA

Postdoctoral Research Assistant, January 2008 - December 2008
Supervisors: Prof. Andrew Zisserman and Prof. Philip Torr
University of Oxford, Oxford, UK

EDUCATION

Ph.D., Computing, November 2003 - November 2007
“Combinatorial and Convex Optimization for Probabilistic Models in Computer Vision”
Supervisors: Prof. Philip H.S. Torr and Prof. Andrew Zisserman
Oxford Brookes University, Oxford, UK

B.Tech. (Hons.), Computer Science and Engineering, June 2003
Supervisors: Prof. P.J. Narayanan and Prof. C.V. Jawahar
International Institute of Information Technology (IIIT), Hyderabad, India

HONORS

Outstanding Reviewer Award, CVPR 2011.

BMVA Sullivan Thesis Prize, 2008 (Best thesis submitted to a UK university in the field of computer and natural vision).

Best Student Paper Honourable Mention Award, NIPS 2007 for paper entitled “An Analysis of Convex Relaxations for MAP Estimation”.

Best Contributed Paper Award, Rank Symposium on Interacting with Still and Moving Images for paper entitled “An Invariant Large Margin Nearest Neighbour Classifier”.

Best Paper Award, ICVGIP 2004 for paper entitled “Learning Layered Pictorial Structures from Video”.

Oxford Brookes Studentship - November 2003 to November 2006.

IIIT Gold Medal for highest GPA (9.8/10) in the graduating class of 2003.

PUBLICATIONS

Book Chapters

M. Pawan Kumar, V. Kolmogorov and P. Torr
“Analyzing Convex Relaxations for MAP Estimation”
Advances in Markov Random Fields for Vision and Image Processing

M. Pawan Kumar, P. Torr and A. Zisserman
“An Object Category Specific MRF for Segmentation”
Towards Category-Level Object Recognition

Journal Articles

M. Pawan Kumar, O. Veksler and P. Torr
“Improved Moves for Truncated Convex Models”
In Journal of Machine Learning Research (JMLR), 2011

M. Pawan Kumar, P. Torr and A. Zisserman
“OBJCUT: Efficient Segmentation using Top-Down and Bottom-Up Cues”
In Pattern Analysis and Machine Intelligence (PAMI), 2010

M. Pawan Kumar, V. Kolmogorov and P. Torr
“An Analysis of Convex Relaxations for MAP Estimation of Discrete MRFs”
In Journal of Machine Learning Research (JMLR), 2009

P. Kohli, M. Pawan Kumar and P. Torr
“P3 and Beyond: Move Making Algorithms for Solving Higher Order Functions”
In Pattern Analysis and Machine Intelligence (PAMI), 2009

M. Pawan Kumar, P.H.S. Torr and A. Zisserman
“Learning Layered Motion Segmentations of Video”
In International Journal of Computer Vision (IJCV), 2008

Conference Papers

M. Pawan Kumar, B. Packer and D. Koller
“Modeling Latent Variable Uncertainty for Loss-based Learning”
In Proceedings of International Conference on Machine Learning (ICML), 2012

K. Miller, M. Pawan Kumar, B. Packer, D. Goodman and D. Koller
“Max-Margin Min-Entropy Models”
In Proceedings of Conference on Artificial Intelligence and Statistics (AISTATS), 2012

M. Pawan Kumar, H. Turki, D. Preston and D. Koller
“Learning Specific-Class Segmentation from Diverse Data”
In Proceedings of International Conference on Computer Vision (ICCV), 2011

M. Pawan Kumar, B. Packer and D. Koller
“Self-Paced Learning for Latent Variable Models”
In Proceedings of Advances in Neural Information Processing Systems (NIPS), 2010

- M. Pawan Kumar and D. Koller
“Efficiently Selecting Regions for Scene Understanding”
In Proceedings of Conference on Computer Vision and Pattern Recognition (CVPR), 2010
- P. Kohli and M. Pawan Kumar
“Energy Minimization for Linear Envelope MRFs”
In Proceedings of Conference on Computer Vision and Pattern Recognition (CVPR), 2010
- M. Pawan Kumar and D. Koller
“Learning a Small Mixture of Trees”
In Proceedings of Advances in Neural Information Processing Systems (NIPS), 2009
- M. Pawan Kumar, A. Zisserman and P. Torr
“Efficient Discriminative Learning of Parts-based Models”
In Proceedings of International Conference on Computer Vision (ICCV), 2009
- M. Pawan Kumar and D. Koller
“MAP Estimation of Semi-Metric MRFs via Hierarchical Graph Cuts”
In Proceedings of Conference on Uncertainty in Artificial Intelligence (UAI), 2009
- M. Pawan Kumar and P. Torr
“Improved Moves for Truncated Convex Models”
In Proceedings of Advances in Neural Information Processing Systems (NIPS), 2008
- M. Pawan Kumar and P. Torr
“Efficiently Solving Convex Relaxations for MAP Estimation”
In Proceedings of International Conference on Machine Learning (ICML), 2008
- M. Pawan Kumar, V. Kolmogorov and P. Torr
“An Analysis of Convex Relaxations for MAP Estimation”
In Proceedings of Advances in Neural Information Processing Systems (NIPS), 2007
- M. Pawan Kumar, P. Torr and A. Zisserman
“An Invariant Large Margin Nearest Neighbour Classifier”
In Proceedings of International Conference on Computer Vision (ICCV), 2007
- P. Kohli, M. Pawan Kumar and P. Torr
“P3 and Beyond: Solving Energies with Higher Order Cliques”
In Proceedings of Conference on Computer Vision and Pattern Recognition (CVPR), 2007
- M. Pawan Kumar, P. Torr and A. Zisserman
“Solving Markov Random Fields using Second Order Cone Programming Relaxations”
In Proceedings of Conference on Computer Vision and Pattern Recognition (CVPR), 2006
- M. Pawan Kumar and P. Torr
“Fast Memory-Efficient Generalized Belief Propagation”
In Proceedings of European Conference on Computer Vision (ECCV), 2006
- M. Pawan Kumar, P. Torr and A. Zisserman

“Learning Layered Motion Segmentations of Video”
In Proceedings of International Conference on Computer Vision (ICCV), 2005

M. Pawan Kumar, P. Torr and A. Zisserman
“OBJ CUT”
In Proceedings of Conference on Computer Vision and Pattern Recognition (CVPR), 2005

M. Pawan Kumar, P. Torr and A. Zisserman
“Learning Layered Pictorial Structures from Video”
In Proceedings of Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), 2004

M. Pawan Kumar, P. Torr and A. Zisserman
“Extending Pictorial Structures for Object Recognition”
In Proceedings of British Machine Vision Conference (BMVC), 2004

INVITED TALKS
AND SEMINARS

“Modeling Latent Variable Uncertainty for Loss-based Learning”
Berkeley-INRIA-Stanford Symposium, 2012
DAGS Internal Seminar, 2012

“Max-Margin Latent Variable Models”
Mysore Park Workshop on Computer Vision, 2011

“Learning to Segment with Diverse Data”
Ecole Centrale Paris (ECP) Seminar, 2011
Ecole Normale Supérieure (ENS) Seminar, 2011
Kungliga Tekniska Högskolan (KTH) Seminar, 2011

“Self-Paced Learning for Specific-Class Semantic Segmentation”
Microsoft Research India Vision Shindig, 2010

“Curriculum Learning for Latent Structural SVM”
TTI-Chicago Seminar, 2010

“Relaxations and Moves for MAP Estimation in MRFs”
NIPS 2009 Workshop on Discrete Optimization

“Hierarchical Graph Cuts for Semi-Metric Labeling”
DAGS Internal Seminar, 2009

“Improved Moves for Truncated Convex Models”
Microsoft Research Cambridge Symposium, 2008

“An Analysis of Convex Relaxations for MAP Estimation”
IPAM Symposium, 2008

“Invariant Large Margin Nearest Neighbour Classifier”
Rank Symposium, 2007

“Layered Pictorial Structures for Object Category Segmentation”
Microsoft Research Cambridge Seminar, 2005
University of Leeds Seminar, 2005

TUTORIALS

“Learning with Inference for Discrete Graphical Models”
EUSIPCO, 2012

“Learning with Inference for Discrete Graphical Models”
ICCV, 2011

“Markov Models for Computer Vision”
ICVGIP, 2010

“MAP Inference in Discrete Models”
ICCV, 2009

“MAP Estimation Algorithms in Computer Vision”
ECCV, 2008

PROFESSIONAL
DUTIES

Co-organizer for ISVC 2012 special track on “Optimization for Vision, Graphics and Medical Imaging”.

Co-organizer for CVPR 2011 workshop on “Inference in Graphical Models with Structured Potentials”.

Program committee member: NIPS, ICML, AISTATS, ICCV, CVPR, ECCV, BMVC, ICVGIP.

Reviewer: JMLR, PAMI, IJCV, CVIU.

REFERENCES

Available on request.

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