Puneet K. Dokania

http://puneetkdokania.github.io

Center for Visual Computing
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Interests

Machine Learning, Inference, Vision

Education

2012-Present **PhD Student**.
Institution: INRIA and CentraleSupélec
Advisors: Prof. M. Pawan Kumar and Prof. Nikos Paragios

2011-2012 **Master of Science with Specialization in Graphics Vision and Robotics**.
Institution: Ecole Nationale Supérieure d'Informatique et Mathématiques Appliquées, France
Advisors: Prof. Christian Laugier, Dr. Stéphanie Lefèvre, and Dr. Mathias Perrolaz

2005-2009 **Bachelor of Engineering in Computer Science**.
Institution: Delhi College of Engineering, University of Delhi, India

Publications

Journals

1. *Rounding-based Combinatorial Algorithms for Metric Labeling*, Under Submission, JMLR.
2. *High Dynamic Range Fuzzy Color Image Enhancement Using Ant Colony System*, In Journal of Applied Soft Computing, 2012. Impact 2.97.
3. *A Novel Bacterial Foraging Technique for Edge Detection*, In Pattern Recognition Letters, 2011. Impact 1.46.

Peer-Reviewed Conferences

1. *Parsimonious Labeling*, In ICCV 2015, Santiago, Chile.
2. *Learning to Rank using High-Order Information*, In ECCV 2014, Zurich.
3. *Discriminative parameter estimation for random walks segmentation*, In MICCAI 2013, Nogoya, Japan.
4. *Learning-Based Approach for Online Lane Change Intention Prediction*, In IEEE Intelligent Vehicles Symposium (IV'2013), Australia.

Under Preparation

1. *Regularization path for Structured SVM*, Under preparation.
2. *Optimal Multi-Metric Deformable Registration using Latent Structured SVM*, Under preparation.
3. *A Latent Model for Ranking using High-Order Information*, Under preparation.

Research Responsibilities

Reviewer: CVPR-15, MICCAI-15, ICVGIP-14, Journal CVIU, IEEE ITS, IET ITS

Honours and Awards

Gold Medal: Best Bachelor of Engineering project award in the college.

Technical Skills

Programming Languages: C, C++, MATLAB

Operation Systems: Windows, Ubuntu

Research Experiences

Visiting Researcher, SIERRA Team, INRIA, Paris

Advisor: Dr. Simon Lacoste-Julien

Duration: 15th June to 15th Sept 2015 (3 months)

Project: Developed algorithm to obtain optimal regularization path for structured SVM using faster variants of the Block-Coordinate Frank-Wolfe algorithm.

Masters Internship, eMotion Team, INRIA, Grenoble

Advisors: Prof. Christian Laugier, Dr. Stéphanie Lefèvre, and Dr. Mathias Perrolaz

Duration: Dec 2011 to May 2012 (6 months)

Project: Learning based approach for online lane change intention prediction for autonomous cars. Resulted in a reputed international conference paper.

Research Scientist, Advanced Systems Laboratory, India

Duration: Dec 2009 to Aug 2011 (21 months)

Project: Worked on Kalman filter based navigation system using INS and GPS.

Research Assistant, IIT Delhi, India

Advisor: Prof. Madasu Hanmandlu

Duration: June 2009 to Nov 2009 (worked remotely)

Project: Applications of Swarm Intelligence in the field of Robotics and Image Processing. Published two international journals and one conference papers as the outcome of research conducted here.

Bachelors Internship, AI and Vision Lab, IISc India

Advisor: Prof. K. R. Ramakrishnan

Duration: June 2007 to 3rd Aug 07 (2 months)

Project: Developed an autonomous corridor navigator using depth cues estimated from the stereovision camera.

Teaching (Courses Assisted)

- *Coursera Course on Discrete Inference and Learning in Artificial Vision* by M. Pawan Kumar and Nikos Paragios, Jan - April 2014.
- *Introduction to Machine Learning*, Ecole Centrale Paris, Matthew Blaschko, 2012-13 and 2013-14.
- *Discrete Optimization, Ecole Centrale Paris*, M. Pawan Kumar, 2012-13.
- *Signal Processing*, Ecole Centrale Paris, Iasonas Kokkinos, 2012-13.

Summer Schools and Recent Courses Attended

- Machine Learning Summer School 2014, Reykjavik, Iceland.
- Computer Vision and Machine Learning Summer School 2013, Paris, France.
- *Deep Learning*, by Iasonas Kokkinos, 2014.
- *Probabilistic Graphical Models*, by Francis Bach and Guillaume Obozinski, 2013.
- *Kernel Methods for Learning*, by Jean-Phillipe Vert, 2013.
- *Convex Optimization*, by Alexandre d'Aspremont, 2014.
- *Discrete Optimization*, by N. Komodakis and M. Pawan Kumar, 2014.