PUNEET KUMAR DOKANIA

http : //puneetkdokania.github.io/

INTERESTS

Thoeretical and practical problems related to Machine Learning, Computer Vision, Approximation Algorithms and Inference in Graphical Models. I am interested in almost every critical problems related to the above mentioned fields.

EDUCATION

Ecole Centrale de Paris and INRIA Scalay
Center for Learning and Visual Computing
PhD Student : October 2012 - **Present**
Supervisors: Prof. M. Pawan Kumar and Prof. Nikos Paragios

Ecole Nationale Suprieure d'Informatique et Mathmatiques Appliques, Grenoble, France
Master of Science in Informatics with specialization in Graphics, Vision and Robotics
Sept 2011 - July 2012
Delhi College of Engineering, University of Delhi, India
Bachelor in Computer Engineering, 2005 - May 2009
First Class Degree

EXPERIENCES

Visiting Researcher SIERRA Team, INRIA, Paris 15th June to 15th Sept 2015
Worked with Dr. Simon Lacoste-Julien on optimization methods for Structured SVM using Frank-Wolfe algorithm.

Masters Thesis E-Motion Team, INRIA Oct 2011 - June 2012
Learning based approach for online lane change intention prediction. Resulted in a reputed international conference paper in this field.

Research Scientist Advanced Systems Laboratory, India Dec 2009 to Aug 2011
Worked on the navigation of Unmanned Aerial Vehicle using EKF based integration of INS and GPS. Published one conference paper.

Research Assistant IIT Delhi, India June 2009 to Nov 2009
Worked on the applications of Swarm Intelligence in the field of Robotics and Image Processing. Published two international journals and one international conference papers as the outcome of research conducted here.

Internship Student AI and Vision Lab, IISc India June 2007 to 3rd Aug 07
Worked on the depth perception of a scene using Stereovision and developed an autonomous corridor navigator using stereovision camera. Implemented a simple probabilistic approach for obstacle avoidance.

COMPUTER SKILLS

C, C++ and Matlab.

HONORS AND AWARDS

1. **Gold Medal**: Best Bachelor of Engineering project award in the whole college.
2. **Best Design Award**: Awarded by Mr. Greg Henderson (President SAE International) in an event CHIMERA 06 where my team developed an amphibian robot.
3. The only student in India who was recommended by the Ministry of HRD for the Commonwealth Scholarship Fellowship Plan, UK 2010 for PG in Computer Science.

PROFESSIONAL TRAININGS AND RECENT COURSES

1. Machine Learning Summer School 2014, Reykjavik, Iceland.
2. Computer Vision and Machine Learning Summer School 2013, Paris, France.
3. Some recent courses that I attended in ENS Cachan
   - *Deep Learning*, by Iasonas Kokkinos.
   - *Probabilistic Graphical Models*, by Francis Bach and Guillaume Obozinski.
   - *Kernel Methods for Learning*, by Jean-Phillipe Vert.
   - *Convex Optmization*, by Alexandre d'Aspremont.
   - *Statistical Learning Theory*, by Nicolas Vayatis.
   - *Discrete Optimization*, by N. Komodakis and M. Pawan Kumar.

TEACHING

1. I was a TA in the **Coursera Course** *Discrete Inference and Learning in Artificial Vision* by M. Pawan Kumar and Nikos Paragios, Jan - April 2014.
2. Other courses that I assisted are:
   - *Introduction to Machine Learning*, Ecole Centrale Paris, Matthew Blaschko, 2013-14.
   - *Discrete Optimization, Ecole Centrale Paris*, M. Pawan Kumar, 2012-13.
   - *Signal Processing*, Ecole Centrale Paris, Iasonas Kokkinos, 2012-13.
   - *Introduction to Machine Learning*, Ecole Centrale Paris, Matthew Blaschko, 2012-13.

PUBLICATIONS IN JOURNALS

1. *Rounding-based Combinatorial Algorithms for Metric Labeling*, Under Submission in 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.

PUBLICATIONS IN CONFERENCES (See my website for complete list)

1. *Parsimonious Labeling*, In ICCV 2014, 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, Nagoya, Japan
4. *Learning-Based Approach for Online Lane Change Intention Prediction*, IEEE Intelligent Vehicles Symposium (IV'2013), Australia
5. *A Novel Approach for Edge Detection using Ant Colony Optimization and Fuzzy Derivative Technique*, IEEE IACC-09, 2009, pp 1427-1433.
6. Technical Report *LAKSHYA The Unmanned Ground Vehicle Design Report*, Intelligent Ground Vehicle Competition (IGVC), USA, 2008, www.igvc.org/design/reports/dr238.pdf.

REFERENCES

1. Prof. M. Pawan Kumar, Ecole Centrale Paris and INRIA Saclay, pawan.kumar@ecp.fr
2. Prof. Nikos Paragios, Ecole Centrale Paris and INRIA Saclay, nikos.paragios@ecp.fr

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