

# RAMIN RAZIPERCHIKOLAEI

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## Research Interests

I am interested in machine learning, optimization and big data problems. In my PhD research projects, I worked on solving discrete and continuous optimization problems, learning binary codes for fast information retrieval tasks, extracting features from large (image, audio, and text) datasets for machine learning tasks, visualizing complex datasets using dimensionality reduction methods, applying data mining algorithms to uncover insights from large datasets, etc.

## Education

### 2013 - Now:

PhD of Computer Science at University of California Merced, Merced, CA, USA. GPA: 4/4

Advisor: Prof. Miguel Á. Carreira-Perpiñán

PhD Thesis Proposal: **Optimization of Binary Hash Function using Method of Auxiliary Coordinates.**

### 2010 - 2012:

MS of Artificial Intelligence at Sharif University of Technology, Tehran, Iran. Total GPA: 4/4

Advisor: Prof. Mansour Jamzad

MS Thesis: **Object Tracking using Online Semi-Supervised Learning.**

### 2006 - 2010:

BS of Computer Engineering at Iran University of Science and Technology, Tehran, Iran. GPA: 3.5/4.

Advisor: Prof. Mohammad Reza Kangavari

BS Thesis: **Qualitative and Quantitative Evaluation of Intelligent Systems**

## Publications

- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Learning circulant support vector machines for fast image search. In *IEEE Int. Conf. Image Processing (ICIP 2017)*, Beijing, China, 2017b
- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Learning supervised binary hashing: Optimization vs diversity. In *IEEE Int. Conf. Image Processing (ICIP 2017)*, Beijing, China, 2017a
- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Learning independent, diverse binary hash functions: Pruning and locality. In *Proc. of the 17th IEEE Int. Conf. Data Mining (ICDM 2016)*, pages 1173–1178, Barcelona, Spain, 2016b
- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Optimizing affinity-based binary hashing using auxiliary coordinates. In *Advances in Neural Information Processing Systems (NIPS)*, pages 640–648, 2016a
- M. Á. Carreira-Perpiñán and **Ramin Raziperchikolaei**. An ensemble diversity approach to supervised binary hashing. In *Advances in Neural Information Processing Systems (NIPS)*, pages 757–765, 2016
- M. Á. Carreira-Perpiñán and **Ramin Raziperchikolaei**. Hashing with binary autoencoders. In *Proc. of the 2015 IEEE Computer Society Conf. Computer Vision and Pattern Recognition (CVPR'15)*, pages 557–566, Boston, MA, 2015a
- **Ramin Raziperchikolaei** and M. Jamzad. Visual tracking using d2-clustering and particle filter. In *Signal Processing and Information Technology, IEEE International Symposium on (ISSPIT 2012)*, pages 230–235, Dec 2012
- A. Bagheri-Khaligh, **Ramin Raziperchikolaei**, and M. E. Moghaddam. A new method for shot classification in soccer sports video based on svm classifier. In *Image Analysis and Interpretation (SSIAI), 2012 IEEE Southwest Symposium on*, pages 109–112, April 2012

## Posters and Extended Abstracts

- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Optimizing affinity-based binary hashing using auxiliary coordinates. In *Bay Area Machine Learning Symposium (BayLearn 2016)*, LinkedIn Campus, Oct 2016e
- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Optimizing affinity-based binary hashing using auxiliary coordinates. In *Advances in non-convex analysis and optimization* at ICML, New York, NY, June 2016d
- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Hashing with binary autoencoders. In *Optimization Methods for the Next Generation of Machine Learning* at ICML, New York, NY, June 2016c
- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Deep learning with auxiliary coordinates, with an application to fast image search. Invited extended abstract, In *INFORMS 2015 Annual Meeting, session on Distributed and Parallel Optimization*, Nov 2015b
- **Ramin Raziperchikolaei** and M. Á. Carreira-Perpiñán. Hashing with binary autoencoders. In *INFORMS Workshop on Data Mining and Analytics*, Nov 2015a
- M. Á. Carreira-Perpiñán and **Ramin Raziperchikolaei**. An ensemble diversity approach to binary hashing. In *Bay Area Machine Learning Symposium (BayLearn 2015)*, Rosewood Sand Hill, CA, Oct 2015b
- M. Á. Carreira-Perpiñán and **Ramin Raziperchikolaei**. Hashing with binary autoencoders. In *Bay Area Machine Learning Symposium (BayLearn 2014)*, UC Berkeley Art Museum, Oct 2014

## Teaching Assistant

### Graduate Teaching Assistant at University of California, Merced:

- *Algorithm Design and Analysis*, Spring 2015. Instructor: Prof. Miguel Á. Carreira-Perpiñán
- *Algorithm Design and Analysis*, Spring 2014. Instructor: Prof. Miguel Á. Carreira-Perpiñán
- *Introduction to Computer Science and Engineering 1*, Fall 2013. Instructor: Chi Yang Leung

### Graduate Teaching Assistant at Sharif University, Tehran, Iran:

- *Image Processing*, Spring 2012. Instructor: Prof. Mansour Jamzad
- *Neural Networks and Fuzzy Systems*, Spring 2012. Instructor: Prof. Mehdi Jalili.
- *Machine Vision*, Fall 2011. Instructor: Prof. Mansour Jamzad.

## Talks

- Nov 2015: "Learning Binary Hash Functions: An Optimization Approach", Electrical Engineering and Computer Science Seminar, UC Merced, CA, USA.
- Nov 2015: "Deep learning with auxiliary coordinates, with an application to fast image search", INFORMS Annual Meeting, Philadelphia, PA, USA
- Nov 2015: "Hashing with binary autoencoders", INFORMS Workshop on Data Mining and Analytics, Philadelphia, PA, USA.
- Sep 2015: "An Ensemble Diversity Approach to Binary Hashing", Bay Area Machine Learning Symposium, Menlo Park, CA, USA.
- Oct 2014: "Hashing with binary autoencoders", Bay Area Machine Learning Symposium, UC Berkeley, CA, USA.
- Sep 2014: "Hashing with binary autoencoders", Electrical Engineering and Computer Science Seminar, UC Merced, CA, USA.
- Oct 2012: "An overview of the online boosting methods for object tracking" lecture for Machine Vision course, Sharif University, Tehran, Iran

## Professional service

- Reviewer for the following conferences: Neural Information Processing Systems (NIPS 2016 and 2017), Computer Vision and Pattern Recognition (CVPR 2016 and 2017), European Conference on Computer Vision (ECCV 2016), International Conference on Computer Vision (ICCV 2017).

## Awards

- Bobcat fellowship from UC Merced for the summer of 2015, 2016 and 2017.
- Travel fellowship from UC Merced for the summer of 2015 and 2016.
- ICML travel award, 2016.

## Skills

- **Programming Languages:** C/C++, Java, Python.
- **Frameworks:** Hadoop, MapReduce, MatConvNet, Caffe.
- **Statistical Software :** MATLAB.

## REFERENCES

Available upon request.