Ramin Raziperchikolaei

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RESEARCH INTERESTS
- ⋄ Machine Learning, Data Mining, Big Data
- ⋄ Continuous/Discrete Optimization
- ⋄ Computer Vision, Deep Learning

PROFESSIONAL EXPERIENCE

⋄ **March 2019 to present**

Research scientist at Rakuten, San Mateo, CA, USA.
Role: research on machine learning and its applications.

⋄ **Aug 2013 to Feb 2019**

Graduate Research Assistant, University of California Merced, Merced, CA, USA.
Role: research on machine learning and computer vision topics such as binary hashing for fast image retrieval, low dimensional representation of images, and learning the governing equation in ODEs.

⋄ **Aug 2010 to Aug 2013**

Graduate Research Assistant, Sharif University of Technology, Tehran, IRAN.
Role: developing new object tracking and classification methods using machine learning techniques such as clustering, semi-supervised learning, online learning, etc.

EDUCATION

⋄ **2013 - 209:**

Ph.D of Computer Science at University of California Merced, Merced, CA, USA.
Advisor: Prof. Paul P. Maglio
Thesis: **Block Coordinate Descent Proximal Method for ODE Estimation and Discovery**.

⋄ **2010 - 2012**:

M.Sc of Artificial Intelligence at Sharif University of Technology, Tehran, Iran.
Advisor: Prof. Mansour Jamzad
Thesis: **Object Tracking using Online Semi-Supervised Learning**.

⋄ **2006 - 2010**:

B.Sc of Computer Engineering at Iran University of Science and Technology, Tehran, Iran.
Advisor: Prof. Mohammad Reza Kangavari
Thesis: **Qualitative and Quantitative Evaluation of Intelligent Systems**

PUBLICATIONS

⋄ **Ramin Raziperchikolaei** and H. S. Bhat. A block coordinate descent proximal method for simultaneous filtering and parameter estimation. In *Thirty-sixth International Conference on Machine Learning (**ICML 2019**)*, Long Beach, CA, jun 2019

⋄ **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 circulant support vector machines: the exact solution. In *OPT 2017: Optimization for Machine Learning* at **NIPS**, Long Beach, CA, Dec 2017c

◇ M. Á. Carreira-Perpiñán and **Ramin Raziperchikolaei**. Learning supervised binary hashing without binary code optimization. In *Nearest Neighbors for Modern Applications with Massive Data: An Age-old Solution with New Challenges* at **NIPS**, Long Beach, CA, Dec 2017b

◇ M. Á. Carreira-Perpiñán and **Ramin Raziperchikolaei**. Learning supervised binary hashing without binary code optimization. In *Bay Area Machine Learning Symposium (**BayLearn 2017**)*, Cupertino, CA, Apple, Oct 2017a

◇ **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

SKILLS

◇ **Programming Languages:** Python, C/C++.

◇ **Frameworks:** Hadoop, MapReduce, MatConvNet, TensorFlow.

◇ **Statistical Software :** MATLAB.

TEACHING ASSISTANT

Graduate Teaching Assistant at University of California, Merced:
◇ *Algorithm Design and Analysis*, Spring 2018. Instructor: Prof. Sungjin Im
◇ *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

◇ Oct 2017: "Learning Binary Hash Functions: Optimisation- and Ensemble-based Approaches", Electrical Engineering and Computer Science Seminar, UC Merced, CA, USA.

◇ 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, 2017, 2018, and 2019)

◇ International Conference on Machine Learning (ICML 2018)

◇ Computer Vision and Pattern Recognition (CVPR 2016, 2017, and 2019)

◇ European Conference on Computer Vision (ECCV 2016 and 2018)

◇ 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.

◇ Ranked 61st among more than 4000 Participants in National Entrance Exam of universities for M.Sc. of Artificial Intelligence 2010.

REFERENCES

Available upon request.