Mahdi M. Kalayeh

Curriculum Vitae

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EDUCATION

Doctor of Philosophy, Computer Science (August 2012 - Present)
University of Central Florida, Orlando, FL
GPA: 3.92/4.0
Adviser: Mubarak Shah, Ph.D.

Master of Science, Electrical Engineering (August 2009 - December 2010)
Illinois Institute of Technology, Chicago, IL
GPA: 3.87/4.0
Thesis Title: Numerical Observer for Image Quality Assessment using Multi Kernel
Relevance Vector Machines
Adviser: Jovan G. Brankov, Ph.D.

Bachelor of Science, Electrical Engineering (September 2005 - July 2009)
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran.
GPA: 3.5/4.0
Thesis Title: Digital Image Steganalysis in Frequency Domain based on Pseudo-
Random Blocking Method
Adviser: Hassan Aghaenia, Ph.D.

RESEARCH INTERESTS

Computer Vision and Machine Learning:
- Deep Learning
- Visual Attribute Prediction
- Semantic Segmentation
- Video Content Analysis
- Complex Event and Action Recognition
- Object Recognition and Scene Understanding

PUBLICATIONS

1. M. M Kalayeh and Mubarak Shah, **On Symbiosis of Attribute Prediction and Semantic Segmentation**, IEEE Transactions on Pattern Analysis and Machine Intelligence **(PAMI)**, 2018. (under review)

2. M. M Kalayeh and Mubarak Shah, **Training Faster by Separating Modes of Variation in Batch-normalized Models**, IEEE Transactions on Pattern Analysis and Machine Intelligence **(PAMI)**, 2018.

3. M. M Kalayeh, E. Basaran, M. Gokmen, M. E. Kamasak and Mubarak Shah, **Human Semantic Parsing for Person Re-identification** , IEEE International Conference on Computer Vision and Pattern Recognition **(CVPR)**,

2018.

4. M. M. Kalayeh, B. Gong and M. Shah, **Improving Facial Attribute Prediction using Semantic Segmentation**, IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2017.

5. M. M. Kalayeh, M. Seifu, W. LaLanne and M. Shah, **How to Take a Good Selfie?**, ACM International Conference on Multimedia (**ACM MM**), 2015.

6. M. M. Kalayeh, S. Mussmann, A. Petrakova, N. da Vitoria Lobo and M. Shah, **Understanding Trajectory Behavior: A Motion Pattern Approach**, arXiv:1501.00614, January, 2015.

7. S. Bhattacharya, M. M. Kalayeh, R. Sukthankar and M. Shah, **Recognition of Complex Events: Exploiting Temporal Dynamics between Underlying Concepts**, IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2014. (**Oral**)

8. M. M. Kalayeh, H. Idrees and M. Shah, **NMF-KNN: Image Annotation using Weighted Multi-view Non-negative Matrix Factorization**, IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2014.

9. T. Marin, M. M. Kalayeh, F. M. Parages, and J. G. Brankov, **Numerical Surrogates for Human Observers in Myocardial Motion Evaluation from SPECT Images**, IEEE Transactions on Medical Imaging (**TMI**), 2014.

10. Y. Mohsenzadeh, H. Sheikhzadeh, A. M. Reza, N. Bathaee and M. M. Kalayeh, **The Relevance Sample-Feature Machine: A Sparse Bayesian Learning Approach to Joint Feature-Sample Selection**, IEEE Transactions on Cybernetics, 2013.

11. M. M. Kalayeh, T. Marin and J. G. Brankov, **Generalization Evaluation of Machine Learning Numerical Observers for Image Quality Assessment**, IEEE Transactions on Nuclear Science (**TNS**), 2013.

12. M. M. Kalayeh, T. Marin, P. H. Pretorius, M. N. Wernick, Y. Yang and J. G. Brankov, **Channelized Relevance Vector Machine as a Numerical Observer for Cardiac Perfusion Defect Detection Task**, SPIE Medical Imaging, 2011. (**Oral**)

13. T. Marin, M. M. Kalayeh, P. H. Pretorius, M. N. Wernick, Y. Yang and J. G. Brankov, **Numerical Observer for Cardiac Motion Assessment Using Machine Learning**, SPIE Medical Imaging, 2011. (**Oral**)

SKILLS Programming Languages: Python and MATLAB
Operating Systems: Linux, Microsoft Windows and MAC OS X
Deep Learning Frameworks: Caffe, TensorFlow, Keras, Chainer and PyTorch

2

WORK EXPERIENCES	Graduate Research Assistant Center for Research in Computer Vision (CRCV) University of Central Florida, Orlando, FL	Fall 2012 - Present
	Graduate Teaching Assistant Electrical Engineering and Computer Science Department University of Central Florida, Orlando, FL	Fall 2012 - Spring 2013
	Mentor at NSF REU program in Computer Vision Center for Research in Computer Vision (CRCV) University of Central Florida, Orlando, FL	Summers 2013 - 2015
	Visiting Researcher Multimedia Signal Processing Research Laboratory Electrical Engineering Department Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran	Spring 2011 - Spring 2012
	Graduate Research Assistant Medical Imaging Research Center (MIRC) Illinois Institute of Technology, Chicago, IL	Fall 2009 - Fall 2010
	Member of Parsian Robotics Group Electrical Engineering Department Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran	Spring 2006 - Spring 2008

SERVICES

Reviewer for:
- CVPR
- Springer International Journal of Computer Vision (IJCV)
- IEEE Transactions on Image Processing
- IEEE Transactions on Multimedia
- Elsevier Signal Processing Journal
- Elsevier Pattern Recognition Letters

MENTORSHIP

NSF REU program interns in Computer Vision:
- Stephen Mussmann (Summer 2013) now at Stanford University
- Alla Petrakova (Summer 2013) now at GE
- Misrak Seifu (Summer 2014) now at Accenture
- Wesna LaLanne (Summer 2014)
- Jonathan Pham (Summer 2015) now at USC
- David J. Hill (Summer 2015)

RELEVANT COURSEWORK

Computer Vision, Image Processing, Complexity Theory, Advanced Computer Vision, Stochastic Differential Equations, Design and Analysis of Algorithms, Statistical Signal Processing, Random Process, Applied Optimization, Numerical Analysis, Fuzzy Systems, Neural Networks, Digital Signal Processing, Digital Speech Processing, Neuro-Imaging, Advanced Computer Architecture.