

Hamed Pirsiavash

CONTACT INFORMATION	1000 Hilltop Circle, ITE 342 Baltimore, MD 21250	<i>E-mail:</i> hpirsiav@umbc.edu <i>Web:</i> http://people.csail.mit.edu/hpirsiav/
CURRENT POSITION	Assistant Professor Department of Computer Science and Electrical Engineering University of Maryland, Baltimore County (UMBC)	
RESEARCH INTERESTS	Computer Vision Machine Learning	
EDUCATION	University of California Irvine , Irvine, CA <i>Ph.D. in Computer Science</i> (GPA: 4.0/4.0) • Advisor: Prof. Deva Ramanan (now at CMU) • Co-advisor: Prof. Ramesh Jain • Thesis: Scalable Action Recognition in Continuous Video Streams	09/2007 - 09/2012
	Sharif University of Technology , Tehran, Iran <i>M.Sc. in Electrical Engineering</i> • Advisor: Prof. Farokh Marvasti • Co-advisor: Prof. Shohreh Kasaei • Thesis: Moving Object Segmentation in Video Sequences	09/2003 - 01/2006
	Iran University of Science and Technology , Tehran, Iran <i>B.Sc. in Electrical Engineering</i>	09/1999 - 09/2003
	University of Maryland, Baltimore County (UMBC) , Baltimore, MD <i>Assistant Professor</i> • Computer vision and machine learning	08/2015 - present
	Massachusetts Institute of Technology (MIT) , Cambridge, MA <i>Postdoctoral Research Associate with Prof. Antonio Torralba</i> • Human activity understanding	10/2012 - 06/2015
	University of California Irvine (UCI) , Irvine, CA <i>Research Assistant with Prof. Deva Ramanan</i> • Object detection and tracking and action recognition	09/2007 - 09/2012
ACADEMIC EXPERIENCE	University of Miami , Coral Gables, FL <i>Research Assistant with Prof. Shahriar Negahdaripour</i> • Pairing optical and sonar cameras to perform underwater 3D reconstruction	08/2006 - 06/2007
	Sharif University of Technology , Tehran, Iran <i>Research Assistant with Prof. Farokh Marvasti</i> • Segmentation, denoising, and watermarking in images and videos	09/2003 - 01/2006
	FX Palo Alto Laboratory (FXPAL) , Palo Alto, CA <i>Research Intern</i> • Summarization and retrieval in lecture videos: www.talkminer.com So far, it has indexed more than 60,000 lecture videos from YouTube and other sources.	06/2009 - 09/2009
INDUSTRIAL EXPERIENCE	Mitsubishi Electric Research Labs (MERL) , Cambridge, MA <i>Research Intern</i>	06/2008 - 09/2008

- Human behavior prediction using a motion sensor network installed in a building

Payasoft Co., Tehran, Iran 05/2000 - 07/2006

Researcher and Algorithm Developer

- Optical character recognition (OCR) systems for handwritten Persian and Arabic scripts
Currently being used in large scale in the data entry process of several national organizations in Iran with more than 20 million records annually.

Resana Afzar Co., Tehran, Iran 01/2006 - 07/2006

Researcher and Algorithm Developer

- Developed algorithms for video denoising and stabilization for National Iranian Movie Archive

TEACHING
EXPERIENCE

University of Maryland, Baltimore County, Baltimore, MA 2015-present

Instructor for “Machine Learning” and “Computer Vision”

University of California Irvine, Irvine, CA 2008-2009

Teaching Assistant for “Digital Logic Design”

Sharif University of Technology, Tehran, Iran 2005

Instructor for “Wireless Communications Lab.”

Sharif University of Technology, Tehran, Iran 2005

Teaching Assistant for “Advanced Image Processing” and “Digital Image Processing”

Iran University of Science and Technology, Tehran, Iran 2001

Teaching Assistant for “Electrical Circuits”

Allameh Helli Middle School (NODET), Tehran, Iran 2000-2004

Instructor for “Computer Programming and Algorithms” and “Logic Circuit Design”

SELECTED
HONORS AND
AWARDS

Best Paper Award in BMG Workshop at CVPR 2007 2007

Travel Grant, CVPR 2014 2014

Doctoral Consortium Travel Grant, CVPR 2012 2012

Ranked in Top 3 in hITEC Entrepreneurship Competition at UC Irvine 2009

Ranked 13/~8,000, Nationwide Entrance Exam for Graduate Studies 2003

Ranked in Top 0.1%, National Electrical Engineering Olympiad 2003

Silver Medal in the National Physics Olympiad for high school students 1998

Admission to middle school and high school in National Organization for Development of Exceptional Talents (NODET) (success rate <0.3%) 1992 and 1995

ACADEMIC
SERVICE

Co-organizer

- Workshop on Egocentric Vision at CVPR 2012

Program Committee Member / Reviewer

- IJCV: International Journal of Computer Vision
- TPAMI: IEEE Transactions on Pattern Analysis and Machine Intelligence
- JEI: Journal of Electronic Imaging
- CVPR 2011-2016: IEEE Conference on Computer Vision and Pattern Recognition
- ICCV 2011-2015: International Conference on Computer Vision
- NIPS 2013-2015: Advances in Neural Information Processing Systems
- ICML 2016: International Conference on Machine Learning
- ECCV 2012-2014: European Conference on Computer Vision

- ACCV 2014: Asian Conference on Computer Vision
- ACM MM 2013-2014: ACM Multimedia
- IROS 2011: IEEE/RSJ International Conference on Intelligent Robots and Systems
- ICMR 2011: ACM International Conference on Multimedia Retrieval
- EUSIPCO 2011: 19th European Signal Processing Conference
- Workshop on Scene Understanding at CVPR 2014
- Workshop on Egocentric Vision at CVPR 2014.
- Workshop on Scene Understanding for Autonomous Systems at ACCV 2014
- Workshop on Wearable Computer Vision Systems at ICCV 2013
- Workshop on Understanding Human Activities at ICCV 2013

INVITED TALKS /
PRESENTATIONS

- University of Maryland, Colledge park, “Human action understanding” 10/2014
- University of Maryland, Colledge park, “Seeing people thinking” 10/2014
- John Hopkins University, “Human action understanding” 10/2014
- Boston University, “Human action understanding” 10/2014
- CVPR 2014, “Parsing videos of actions with segmental grammars” 06/2014
- MURI meeting, UCLA, “3D scenes” 10/2013
- Boston University, “Steerable part models” 02/2013
- Caltech, “Action recognition in video” 04/2012
- UIUC, “Action recognition in video” 05/2012
- CMU, “Action recognition in video” 05/2012
- MIT, “Action recognition in video” 05/2012
- Southern California Vision Meetup, “Action recognition in video” 05/2012
- HP Labs, “Action recognition in video” 06/2012
- CVPR 2012, “Detecting Activities of Daily Living in First-person Camera Views” 06/2012
- Canon USA Innovation Center, “Multiple object tracking” 09/2011
- Southern California Vision Meetup, “Bilinear classifiers for visual recognition” 10/2009

SELECETED
PRESS COVERAGE

- NBC News, “New Technique Identifies Human Actions in Videos” 06/2014
- Wired UK, “Algorithm searches for human actions in videos” 06/2014
- Gigaom, “MIT researchers teach computers to learn whats happening in videos” 05/2014
- ScienceDaily, “Techniques from natural-language processing enable computers to efficiently search video for actions” 05/2014
- MIT Technology Review, “Who Did What?” 05/2014
- MIT News, “Who Did What?” 05/2014
- MIT Technology Review, “Random Image Experiment Reveals The Building Blocks of Human Imagination” 10/2014

PATENT

- “Systems and methods for indexing presentation videos”, FXPAL, US08280158.

TECHNICAL REPORTS
/UNDER REVIEW

- Carl Vondrick, Hamed Pirsiavash, Antonio Torralba, “Anticipating the Future by Watching Unlabeled Video”, arXiv:1504.08023, 2015.
- Hamed Pirsiavash*, Carl Vondrick*, Antonio Torralba, “Inferring the Why in Images”, arXiv: 1406.5472, 2014. *equal contribution

SELECTED
PUBLICATIONS

- Agata Lapedriza, Hamed Pirsiavash, Zoya Bylinskii, Antonio Torralba, “Are all training examples equally valuable?”, arXiv:1311.6510, 2013.
- Carl Vondrick, Aditya Khosla, Hamed Pirsiavash, Tomasz Malisiewicz, Antonio Torralba, “Visualizing Object Detection Features”, to appear in International Journal of Computer Vision (IJCV), 2016.
- Carl Vondrick, Hamed Pirsiavash, Antonio Torralba, “Learning visual biases from human imagination”, Neural Information Processing Systems (NIPS) 2015.
- Hamed Pirsiavash, Carl Vondrick, Antonio Torralba, “Assessing the Quality of Actions”, European Conference on Computer Vision (ECCV) 2014.
- Hamed Pirsiavash, Deva Ramanan, “Parsing Videos of Actions with Segmental Grammars”, International Conference on Computer Vision and Pattern Recognition (CVPR) 2014 (**oral presentation**) (acceptance rate <4%).
- Joseph Lim, Hamed Pirsiavash, Antonio Torralba, “Parsing IKEA Objects: Fine Pose Estimation”, International Conference on Computer Vision (ICCV) 2013.
- Hamed Pirsiavash, Deva Ramanan, “Detecting Activities of Daily Living in First-person Camera Views”, International Conference on Computer Vision and Pattern Recognition (CVPR) 2012 (**oral presentation**) (acceptance rate <3%).
- Hamed Pirsiavash, Deva Ramanan, “Steerable Part Models”, International Conference on Computer Vision and Pattern Recognition (CVPR) 2012.
- Hamed Pirsiavash, Deva Ramanan, Charless Fowlkes, “Globally-Optimal Greedy Algorithms for Tracking a Variable Number of Objects”, International Conference on Computer Vision and Pattern Recognition (CVPR) 2011.
- Sangmin Oh et al., “A Large-scale Benchmark Dataset for Event Recognition in Surveillance Video”, International Conference on Computer Vision and Pattern Recognition (CVPR) 2011.
- John Adcock, Matthew Cooper, Laurent Denoue, Hamed Pirsiavash, Lawrence Rowe, “Talk-Miner: A Lecture Webcast Search Engine”, ACM Multimedia 2010.
- Hamed Pirsiavash, Deva Ramanan, Charless Fowlkes, “Bilinear Classifiers for Visual Recognition”, Neural Information Processing Systems (NIPS) 2009 (**spotlight presentation**) (acceptance rate <8%).
- Shahriar Negahdaripour, Hicham Sekkati, Hamed Pirsiavash, “Opti-Acoustic Stereo Imaging: On System Calibration and 3-D Target Reconstruction”, IEEE Transactions on Image Processing, Vol 18, Issue 6, Jun 2009, PP: 1203-1214.
- Vivek Singh, Hamed Pirsiavash, Ish Rishabh, Ramesh Jain, “Towards Environment-to-Environment (E2E) multimedia communication systems”, Multimedia Tools and Applications Journal, Springer Netherlands, Vol 44, Num 3, pp 361-388, May 2009.

OTHER
PUBLICATIONS

- Maxim Lazarov, Hamed Pirsiavash, Behzad Sajadi, Uddipan Mukherjee, Aditi Majumder, “Data Handling Displays”, Workshops of CVPR 2009 - 6th IEEE/ACM International Workshop on Projector-Camera Systems (Procams 2009).
- Pinaki Sinha, Hamed Pirsiavash, Ramesh Jain, “Personal Photo Album Summarization”, ACM Multimedia 2009 - Grand Challenge.
- Hamed Pirsiavash, Vivek Singh, Aditi Majumder, Ramesh Jain, “Shared Visualization Spaces for Environment-to-Environment Communication”, NSF Workshop on Media Arts, Science, and Technology 2009.
- Vivek Singh, Hamed Pirsiavash, Ish Rishabh, Ramesh Jain, “Towards Environment-to-Environment

- (E2E) Multimedia Communication Systems”, Workshops of ACM Multimedia 2008 - Semantic Ambient Media Experience.
- Ish Rishabh, Vivek Kumar Singh, Hamed Pirsiavash, Ramesh Jain, “Environment to environment (E2E) communication systems for collaborative work”, Computer supported cooperative work (CSCW) 2008.
 - Shahriar Negahdaripour, Hamed Pirsiavash, Hicham Sekkati, “Integration of motion cues in optical and sonar video imaging for 3-D positioning”, Workshops of CVPR 2007 - Towards Benchmarking Automated Calibration, Orientation, and Surface Reconstruction from Images.
 - Shahriar Negahdaripour, Hicham Sekkati, Hamed Pirsiavash, “Opti-Acoustic Stereo Imaging, System Calibration and 3-D Reconstruction”, Workshops of CVPR 2007 - Beyond Multiview Geometry (**Best Paper Award**).
 - Amir Houmansadr, Hamed Pirsiavash, Shahrokh Ghaemmaghami, “Robust Content-based Video Watermarking Exploiting Motion Entropy Masking Effect”, International Conference on Signal Processing and Multimedia Applications 2006.
 - Hamed Pirsiavash, Shohreh Kasaei, Farokh Marvasti, “An Efficient Parameter Selection Criterion for Image Denoising”, 5th IEEE International Symposium on Signal Processing and Information Technology 2005.
 - Hamed Pirsiavash, Mohammad Soleymani, Gholam-Ali Hossein-Zadeh, “An Iterative Approach for Reconstruction of Arbitrary Sparsely Sampled Magnetic Resonance Images”, The 18th IEEE International Symposium on Computer-Based Medical Systems 2005.
 - Hamed Pirsiavash, Ramin Mehran, Farbod Razzazi, “A Robust Free Size OCR for Omni-font Persian/Arabic Printed Document using MLP/SVM”, Lecture Notes in Computer Science, LNCS 3773, pp. 601-610, Springer Verlag, Nov. 2005.
 - Ramin Mehran, Hamed Pirsiavash, Farbod Razzazi, “A Front-end OCR for Omni-font Persian/Arabic Cursive Printed Documents”, Digital Image Computing: Techniques and Applications (DICTA) 2005.
 - Hamed Pirsiavash, Farbod Razzazi, “Design and Implementation of a Hierarchical Classifier for Isolated Handwritten Persian/Arabic Characters”, Int. Conference on Signal Processing, 2003.