MAHEEN RASHID

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EDUCATION

University of California at Davis - Computer Science Department 2015-Present
PhD. Advisor: Dr. Yong Jae Lee

Carnegie Mellon University - Robotics Institute 2012-2014
Masters in Robotics. Advisor: Dr. Martial Hebert

Lahore University of Management Sciences. School of Science and Engineering 2007-2011
BSc (Hons) in Computer Science. Advisor: Dr. Sohaib Khan

WORK EXPERIENCE

KTH Royal Institute of Technology Fall 2018
Visiting Student Researcher Stockholm, Sweden
Working on graph network based approach to weakly supervised action localization.
Researching correlations between equine facial action units and modaltities of expression.
To be submitted to CVPR 2019

UC Davis - Computer Science Department Sep 2015 - Present
Graduate Student Researcher Davis, CA, USA
Researching automatic pain detection in horses as part of large interdisciplinary project. Involves data collection and annotation, facial action unit coding, and deep learning on animal and human expressions.
Under Review at WACV 2019. Written in Pytorch.
Accepted at CVPR 2017. Written in Torch and Python.
Accepted at Measuring Behavior 2018. Written in Python.

Yahoo - Flickr Vision/ML Team July 2017 - Sep 2017
Research Intern San Francisco, CA, USA
Improved face detection accuracy for personal photo collections. Developed 3D informed spatial transformer network for face recognition. Developed frontalization and occlusion methods for assisting in face recognition.
Developed in Tensorflow.

UC Davis - Computer Science Department Spring 2018, Spring 2016, Fall 2016
Teaching Assistant Davis, CA, USA
Teaching Assistant for Introduction to Programming ECS 30, Computer Vision ECS 177, Theory of Computation ECS 120, and Introduction to Computers ECS 15.

Mint Solutions August 2015 - August 2016
Software Developer Kopavogur, Iceland
Improved the core machine learning engine of MedEye - a pill scanner that uses computer vision to prevent drug errors.
Developed in Python with a MySQL backend.

Carnegie Mellon University - Robotics Institute August 2013 - May 2014
Graduate Student Researcher Pittsburgh, PA, USA
Researched understanding the geometry, layout and composition of indoor scenes through the aid of geometry based features, Google Warehouse 3D models, and 2D object detectors. Written in C/C++ and MATLAB.
Published in 3DV 2014 and IJCV 2014

Computer Science Department- LUMS October 2011 - June 2012
Research Assistant Lahore, Pakistan
Researched angle regularity as a cue for 2D to 3D reconstruction of man-made scenes under supervision of Dr. Sohaib Khan.
Published in CVIU 2018 and ECCV 2012. Developed in MATLAB.

Koc University, Summer Research Program July 2011 - August 2011
Research Assistant Istanbul, Turkey
Developed software to be used in lab experiments on auction behaviour under supervision of Dr. Seda Ertac.

Computer Science Department- LUMS Spring 2011, Fall 2009
Teaching Assistant Lahore, Pakistan

Was Teaching Assistant for the courses Design and Analysis of Algorithms, Discrete Mathematics and Introduction to Computer Science.

Computer Science Department- LUMS Summer 2010, Summer 2009
Research Assistant Lahore, Pakistan
Worked on the project "Regression Depth Conjecture in 3D Space" under supervision of Dr. Nabil Mustafa.
Researched on bounding the maximum number of edges in a Gabriel Graph under the supervision of Dr. Nabil Mustafa.

PUBLICATIONS

Facial Action Unit Detection With Capsules
Under Review WACV, 2019
Maheen Rashid, Yong Jae Lee

What should I annotate? An automatic tool for finding video segments for EquiFACS annotation
Measuring Behavior, 2018
Maheen Rashid, Sofia Broom, Pia H. Andersen, Karina B. Gleerup, Yong Jae Lee

Can a Machine Learn to See Horse Pain? An Interdisciplinary Approach Towards Automated Decoding of Facial Expressions of Pain in the Horse
Measuring Behavior, 2018
Pia Andersen, Karina B. Gleerup, Jennifer Wathan, Britt Coles, Hedvig Kjellstrm, Sofia Broom, Yong Lee, **Maheen Rashid**, Claudia Sonder, Erika Rosenberger, Deborah Forster

Single-View Reconstruction using Orthogonal Line-pairs
Computer Vision and Image Understanding, 2018
Aamer Zaheer, **Maheen Rashid**, Muhammad A Riaz, Sohaib Khan

Interspecies Knowledge Transfer for Facial Keypoint Prediction
Computer Vision and Pattern Recognition, 2017
Maheen Rashid, Xiuye Gu, Yong Jae Lee

Detailed 3D Model Driven Single View Scene Understanding
International Conference on 3D Vision, 2014
Maheen Rashid, Martial Hebert

3DNN: Viewpoint Invariant 3D Geometry Matching for Scene Understanding
International Journal of Computer Vision, 2014
Scott Satkin, **Maheen Rashid**, Jason Lin, Martial Hebert

Shape From Angle Regularity
European Conference of Computer Vision, 2012
Aamer Zaheer, **Maheen Rashid**, Sohaib Khan

SELECTED COURSE PROJECTS

Visualizing Capsule Network Features Spring 2017
Used reconstruction and deep dreaming to visualize features learned by capsule networks trained to do action unit and expression classification. Written in Pytorch/Python.

Higher-order polynomial schemes for visualization Spring 2017
Implemented Levoy's method for ray casting with trilinear and tricubic interpolation. Written in C.

Blind Convolutional Neural Networks Performance Fall 2015
Trained and tested convolutional neural networks with varying levels of familiarity with certain image classes to establish CNN's applicability for unsupervised object discovery.

Automatic Extraction of Goal Events from Soccer Videos Fall 2013
Used visual and audio cues in soccer matches to learn and predict goal events in soccer matches.

Object Swapping in Data Driven Scene Understanding Spring 2013

Used intelligent insertion and replacement of 3D models of indoor scenes and furniture to refine and improve the 3D understanding of indoor scenes from single images.

Single View Reconstruction Using TILT Spring 2013
Used Transform Invariant Low rank Textures as cue for single view reconstruction.

Geometric Refinement using MCMC in Data Driven Scene Understanding Fall 2012
Developed a Markov Chain Monte Carlo based approach to geometric refinement of 3D models matched to indoor scenes.

HONORS RECEIVED AND POSITIONS HELD

Lead Women in Computer Science Graduate Group September 2017 - Present

College of Engineering Dean's Graduate Student Adviosry Committee Member September 2017 - June 2018

Graduate Student Association Computer Science Representative October 2016 - Present

Graduate Student Mentor (First Friend Program) August 2016 - June 2017

Fulbright Scholar August 2012 - May 2014

Graduated on Dean's Honour List June 2011

SKILLS

PyTorch, Torch, Tensorflow, Caffe, Python, Java, C/C++, MATLAB, LaTeX, Bash. Experience in: OpenGL, OpenCV
Selected Course work: Deep Learning, Computer Architecture, Computer Vision, Learning and Geometry Based Methods in Computer Vision, Machine Learning, Math Fundamentals For Robotics, Computer Graphics

VOLUNTEERING

The Citizen's Foundation Rahbar Program, Son Rise Autism Program, Amnesty International