David F. Fouhey

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Current Affiliation

University of California, Berkeley   **September 2016 - Present**

Postdoctoral Fellow
Advisors: Jitendra Malik, Alexei A. Efros

Education

Carnegie Mellon University, The Robotics Institute, Pittsburgh, PA   **September 2011 – August 2016**

Ph.D., Robotics
Advisors: Abhinav Gupta, Martial Hebert
Thesis: Factoring Scenes into 3D Structure and Style
Thesis Committee: Deva Ramanan, William T. Freeman (MIT), Andrew Zisserman (U. Oxford)
GPA: 4.10

Middlebury College, Middlebury, VT   **September 2007 - May 2011**

A.B., Computer Science, *Summa Cum Laude*
Highest Honors in Computer Science; minor in Mathematics
Thesis: Multi-model Estimation in the Presence of Outliers
GPA: 3.93; Major GPA: 4.0

Other Research Experience

Oxford University   **Summer 2015**
(Supervisor: Andrew Zisserman)

Microsoft Research   **Summer 2013**
(Supervisor: Larry Zitnick)

Middlebury College   **2008-2011**
(Supervisor: Daniel Scharstein, Amy Briggs)

CMU-National Robotics Engineering Center   **Summer 2010, Spring 2011**
(Supervisor: Cristian Dima)

Selected Awards and Honors

ICCV 2015 Doctoral Consortium, Selected for Travel Grant

NDSEG Fellowship (2013 - 2016)

NSF Graduate Research Fellowship (2011 - 2013)

Elected to Phi Beta Kappa, awarded Phi Beta Kappa Prize at Middlebury College
(awarded to one student per year in a class of ≈ 625)

Timothy Huang Senior Award for Academic Excellence, CS Department, Middlebury College

Barry M. Goldwater Scholar (2010 - 2011)

Talks

3D Shape Attributes
CVPR, June 2016

Towards a Physical and Human-Centric Understanding of Images
MIT CSAIL, June 2016
UCLA, May 2016
USC CS Colloquium, March 2016
UT Austin UTCS Colloquium, March 2016
CMU VASC Seminar
UC Berkeley, February 2016
Google, ML Seminar, February 2016
Intel Visual Computing Lab, February 2016

Revisiting Qualitative Shape via 3D Shape Attributes
Object Understanding for Interaction Workshop at ICCV 2015, December 2015

Cues and Constraints for 3D Scene Interpretation
University College London, July 2015
University of Edinburgh, IPAB Seminar, July 2015
University of Oxford, Robotics Seminar, July 2015
University of Surrey, CVSSP Seminar, June 2015

Unfolding an Indoor Origami World
ECCV, September 2014 Watch here
CMU VASC Seminar, September 2014

Data-Driven 3D
Tutorial on 3D Scene Understanding, ECCV 2014

Mid-level Likelihoods and Constraints for 3D Scene Interpretation
Robert Bosch Research and Technology Center, June 2014;
Microsoft Research Cambridge, May 2014
University of Oxford, Robotics Seminar, May 2014

Data-Driven 3D Primitives for Single Image Understanding.
CMU VASC Seminar, November 2013

People Watching: Human Actions as a Cue for Single View Geometry.
ECCV, October 2012. Watch here
CMU VASC Seminar, September 2012

Service

Tutorials:
Organizer, Tutorial on 3D Scene Understanding, ECCV 2014.

Program Committee:
Workshop on Affordances in Vision for Cognitive Robotics, RSS 2014
Workshop on Visual Perception of Object and Scene Affordances, ECCV 2014

Reviewer (Selected):
ECCV 2014–, CVPR 2015–, ICCV 2015–, IJCV, TPAMI, CVIU, TIP.

Departmental Service:

Ph.D. Admissions Committee 2014, 2015.

Master's Thesis Committee Member: Maheen Rashid, Zhizhong Li, Meng Song, Aaron Walsman, Rohit Girdhar, Mengtian Li, Lerrel Pinto.

Ph.D. Research Qualifier Committee Member: Jacob Walker, Allison Del Giorno.

Teaching Experience

Co-Instructor: Visual Learning and Recognition, Carnegie Mellon University 16-824, Spring 2016

Guest Lecturer: Visual Learning and Recognition Carnegie Mellon University 16-824, Spring 2015

Guest Lecturer: Visual Recognition, U. Pittsburgh 3710, Spring 2015

Guest Lecturer: Computational Photography, Carnegie Mellon University 15-463, Fall 2014

TA: Computer Vision, Carnegie Mellon University 16-720, Fall 2012.

Publications

R. Girdhar, **D.F. Fouhey**, M. Rodriguez, A. Gupta.
Learning a Predictable and Generative Vector Representation for Objects.
At the *14th European Conference on Computer Vision (ECCV 2016)*.
(**Spotlight**)

D.F. Fouhey, A. Gupta, A. Zisserman.
3D Shape Attributes.
At the *29th Conference on Computer Vision and Pattern Recognition (CVPR 2016)*.
(**Oral: 3.9% acceptance rate**)

R. Girdhar, **D.F. Fouhey**, A. Gupta, K. Kitani, A. Gupta, M. Hebert.
Cutting through the Clutter: Task-Relevant Features for Image Matching.
At the *Winter Conference on Applications of Computer Vision (WACV) 2016*

D.F. Fouhey, W. Hussain, A. Gupta, M. Hebert.
Single Image 3D Without a Single 3D Image.
At the *15th International Conference on Computer Vision (ICCV 2015)*.

X. Wang, **D.F. Fouhey**, A. Gupta.
Designing Deep Networks for Surface Normal Estimation.
At the *28th Conference on Computer Vision and Pattern Recognition (CVPR 2015)*.

D.F. Fouhey, A. Gupta, M. Hebert.
Unfolding an Indoor Origami World.
At the *13th European Conference on Computer Vision (ECCV 2014).*
(**Oral: 2.6% acceptance rate**)

D.F. Fouhey, C. L. Zitnick.
Predicting Object Dynamics in Scenes,
At the *27th Conference on Computer Vision and Pattern Recognition (CVPR 2014).*

D.F. Fouhey, V. Delaitre, A. Gupta, A. Efros, I. Laptev, and J. Sivic.
People Watching: Human Actions as a Cue for Single View Geometry.
In *International Journal of Computer Vision (IJCV)*, Volume 110, Issue 3, pp 259-274, December 2014.

D.F. Fouhey, A. Gupta, M. Hebert.
Data-Driven 3D Primitives for Single-View Scene Understanding.
At *14th International Conference on Computer Vision (ICCV 2013).*

D.F. Fouhey, V. Delaitre, A. Gupta, A. Efros, I. Laptev, and J. Sivic.
People Watching: Human Actions as a Cue for Single View Geometry.
At the *12th European Conference on Computer Vision (ECCV 2012).*
(**Oral: 2.8% acceptance rate** – Invited to IJCV special issue on ECCV 2012)

V. Delaitre, **D.F. Fouhey**, I. Laptev, J. Sivic, A. Gupta, and A.A. Efros.
Scene semantics from long-term observation of people.
At the *12th European Conference on Computer Vision (ECCV 2012).*

D.F. Fouhey, A. Collet, M. Hebert, and S. Srinivasa.
Object Recognition Robust to Imperfect Depth Data.
At the *2nd Workshop on Consumer Depth Cameras for Computer Vision* in conjunction with *ECCV 2012.*

M. Costanza-Robinson, B. Estabrook, and **D.F. Fouhey**.
Representative elementary volume estimation for porosity, moisture saturation, and air-water interfacial areas in unsaturated porous media: Data quality implications.
In Water Resources Research 2011, 47, W07513, doi:10.1029/2010WR009655.

D.F. Fouhey, D. Scharstein, and A. Briggs.
Multiple Plane Detection in Image Pairs Using J-linkage.
At the *20th International Conference on Pattern Recognition (ICPR 2010).*

Last updated: September 13, 2016