

David F. Fouhey

Cory Hall 307
University of California, Berkeley
Berkeley, CA

Email: dfouhey@eecs.berkeley.edu
Homepage: [Here](#)
Google scholar: [Here](#)

Affiliation

- University of Michigan**, Computer Science and Engineering **January 2019 -**
Assistant Professor, Starting January 2019
- INRIA Paris** **September 2018 - November 2018**
Visitor, Willow Group
Hosts: Josef Sivic, Ivan Laptev
- University of California, Berkeley**, EECS Department **September 2016 - August 2018**
Postdoctoral Fellow
Mentors: Alexei A. Efros, Jitendra Malik

Education

- Carnegie Mellon University**, The Robotics Institute, Pittsburgh, PA **September 2011 - August 2016**
Ph.D., Robotics
Advisors: Abhinav Gupta, Martial Hebert
Thesis Committee: Deva Ramanan, William T. Freeman (MIT), Andrew Zisserman (U. Oxford)
- Middlebury College**, Middlebury, VT **September 2007 - May 2011**
A.B., Computer Science, *Summa Cum Laude*
Highest Honors in Computer Science; minor in Mathematics

Other Research Experience

- Oxford University** **Summer 2015**
(Host: Andrew Zisserman)
- Microsoft Research** **Summer 2013**
(Supervisor: Larry Zitnick)
- Middlebury College** **2008-2011**
(Supervisors: Daniel Scharstein, Amy Briggs)
- CMU-National Robotics Engineering Center** **Summer 2010, Spring 2011**
(Supervisor: Cristian Dima)

Selected Awards and Honors

Outstanding Reviewer Award CVPR 2018

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

Recovering a Functional and Three Dimensional Understanding of Images

University of Michigan, April 2018

University of North Carolina, March 2018

CMU, March 2018

UC Irvine, February 2018

Simon Fraser University, February 2018

UC Berkeley BAIR Seminar, January 2018 [Watch here](#)

Predicting Voxel-based Reconstructions of Objects

3rd International Workshop on Recovering 6D Object Pose at ICCV 2017, October 2017

Adventures in 3D and Functional Understanding

UC Berkeley, September 2016

3D Shape Attributes

CVPR, June 2016 [Watch here](#)

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, March 2016

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

Conference Area Chair/Senior Program Committee:
CVPR 2019

Workshops and Tutorials:
Organizer, [Bridges to 3D Workshop](#), CVPR 2018
Organizer, [Bridges to 3D Workshop](#), CVPR 2017
Organizer, [Tutorial on 3D Scene Understanding](#), ECCV 2014

Program Committee:
Workshop on Anticipating Human Behavior, ECCV 2018
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–, BMVC 2017–, 3DV 2017–, NIPS 2018–, IJCV, TPAMI, CVIU, TIP.

Departmental Service:

UC Ph.D. Berkeley Admissions Committee 2017
CMU Ph.D. Admissions Committee 2014, 2015
CMU Master's Thesis Committee Member: Maheen Rashid, Zhizhong Li, Meng Song, Aaron Walsman, Rohit Girdhar, Mengtian Li, Lerrel Pinto.
CMU Ph.D. Research Qualifier Committee Member: Jacob Walker, Allison Del Giorno.

Teaching Experience

AI Mentor: NASA Frontier Development Lab (Summer 2018) – mentoring researchers with a background in astrophysics on deep learning for solar weather analysis.

Co-Instructor: Visual Object and Activity Recognition, UC Berkeley, CS 294-43, Spring 2017, Fall 2017, Spring 2018.

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

Guest Lecturer: Image Manipulation & Computational Photography, UC Berkeley CS194-26, Fall 2016; Visual Learning and Recognition CMU 16-824, Spring 2015; Visual Recognition, U. Pittsburgh 3710, Spring 2015; Computational Photography, CMU 15-463, Fall 2014.

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

Publications

D.F. Fouhey, W. Kuo, A.A. Efros, J. Malik.
From Lifestyle Vlogs to Everyday Interactions.
CVPR 2018.

S. Tulsiani, S. Gupta, **D.F. Fouhey**, A.A. Efros, J. Malik
Factoring Shape, Pose, and Layout from the 2D Image of a 3D Scene.
CVPR 2018.

M. Lescroart, **D.F. Fouhey**, J. Malik
Convolutional neural networks represent shape dimensions – but not as accurately as humans
Abstract at VSS 2018
Note: an extended abstract, not full peer-reviewed paper

D.F. Fouhey, A. Gupta, A. Zisserman.
From Images to 3D Shape Attributes.
To appear in Transactions on Pattern Analysis and Machine Intelligence.

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: 2.9% Acceptance Rate)

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.

Note: a lightly reviewed paper

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).