

# Jia Deng

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CURRENT APPOINTMENT	<b>Assistant Professor</b> Department of Computer Science Princeton University	9/2018-Present
EDUCATION	<b>Princeton University</b> Ph.D. in Computer Science - Dissertation: “ <i>Large-Scale Visual Recognition</i> ” - Advisor: Fei-Fei Li and Kai Li M.A. in Computer Science <b>Tsinghua University</b> B.Eng. in Computer Science - Ranked 1st out of 174, Class of 2006	Princeton, NJ 2012 2008 Beijing, China 2006
HONORS AND AWARDS	Alfred P. Sloan Research Fellowship Google Faculty Research Award Amazon Research Award ZF TRW Automotive Endowed Research Award PAMI Mark Everingham Prize Google Faculty Research Award Yahoo ACE (Academic Career Enhancement) Award Best Paper Award, European Conference on Computer Vision Marr Prize (Best Paper Award), International Conference on Computer Vision Outstanding Graduate, Tsinghua University IBM Scholarship for Outstanding Students in China OOCL Scholarship, Tsinghua University Lenovo Scholarship, Tsinghua University	2018 2017 2017 2017 2016 2015 2014 2014 2013 2006 2005 2004 2003
PUBLICATIONS	PEER-REVIEWED ARTICLES  - Hei Law, <b>Jia Deng</b> . CornerNet: Detecting Objects as Paired Keypoints. <i>European Conference on Computer Vision (ECCV)</i> , 2018  - Ankit Goyal, <b>Jia Deng</b> . Think Visually: Question Answering through Virtual Imagery. <i>Annual Meeting of the Association for Computational Linguistics (ACL)</i> , 2018  - Dawei Yang, <b>Jia Deng</b> . Shape from Shading through Shape Evolution. <i>IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i> , 2018  - Lei Huang, Dawei Yang, Bo Lang, <b>Jia Deng</b> . Decorrelated Batch Normalization. <i>IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i> , 2018	

- Yu-Wei Chao, Sudheendra Vijayanarasimhan, Bryan Seybold, David Ross, **Jia Deng**, Rahul Sukthankar. Rethinking the Faster R-CNN Architecture for Temporal Action Localization. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018
- Mahmoud Azab, Mingzhe Wang, Max Smith, Noriyuki Kojima, **Jia Deng**, Rada Mihalcea. Speaker Naming in Movies. *Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL)*, 2018
- Lanlan Liu, **Jia Deng**. Dynamic Deep Neural Networks: Optimizing Accuracy-Efficiency Trade-offs by Selective Execution. *AAAI Conference on Artificial Intelligence (AAAI)*, 2018
- Yu-Wei Chao, Yunfan Liu, Xieyang Liu, Huayi Zeng, **Jia Deng**. Learning to Detect Human-Object Interactions. *IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2018
- Mingzhe Wang\*, Yihe Tang\*, Jian Wang, **Jia Deng**. Premise Selection for Theorem Proving by Deep Graph Embedding. *Neural Information Processing Systems (NeurIPS)*, 2017. (\*equal contribution)
- Alejandro Newell, **Jia Deng**. Pixels to Graphs by Associative Embedding. *Neural Information Processing Systems (NeurIPS)*, 2017.
- Alejandro Newell, Zhiao Huang, **Jia Deng**. Associative Embedding: End-to-End Learning for Joint Detection and Grouping. *Neural Information Processing Systems (NeurIPS)*, 2017.
- Weifeng Chen, Donglai Xiang, **Jia Deng**. Surface Normals in the Wild. *International Conference on Computer Vision (ICCV)*, 2017
- Yu-Wei Chao, Jimei Yang, Brian Price, Scott Cohen, **Jia Deng**. Forecasting Human Dynamics from Static Images. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017
- Zehuan Yuan, Jonathan Stroud, Tong Lu, **Jia Deng**. Temporal Action Localization by Structured Maximal Sums. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017
- Timnit Gebru, Jonathan Krause, **Jia Deng**, Li Fei-Fei. Scalable annotation of fine-grained categories without experts. *Conference on Human Factors in Computing Systems (CHI)*, 2017
- Timnit Gebru, Jonathan Krause, Yilun Wang, Duyun Chen, **Jia Deng**, Erez Lieberman Aiden, Li Fei-Fei. Using deep learning and Google Street View to estimate the demographic makeup of neighborhoods across the United States. *Proceedings of the National Academy of Sciences (PNAS)*, 2017
- Timnit Gebru, Jonathan Krause, Yilun Wang, Duyun Chen, **Jia Deng**, Li Fei-Fei. Fine-Grained Car Detection for Visual Census Estimation. *AAAI Conference on Artificial Intelligence (AAAI)*, 2017
- Hei Law, Khurshid Ghani, **Jia Deng**. Surgeon Technical Skill Assessment using Computer Vision based Analysis. *Machine Learning for Healthcare (MLHC)*, 2017.
- Weifeng Chen, Zhao Fu, Dawei Yang, **Jia Deng**. Single-Image Depth Perception in the Wild. *Neural Information Processing Systems (NeurIPS)*, 2016.
- Mingzhe Wang, Mahmoud Azab, Noriyuki Kojima, Rada Mihalcea, **Jia Deng**. Structured Matching for Phrase Localization. *European Conference on Computer Vision (ECCV)*, 2016
- Alejandro Newell, Kaiyu Yang, **Jia Deng**. Stacked Hourglass Networks for Human Pose Estimation. *European Conference on Computer Vision (ECCV)*, 2016.
- Vicente Ordonez, Wei Liu, **Jia Deng**, Yejin Choi, Alexander C. Berg, Tamara L. Berg. *Learning to Name Objects. Communications of the ACM*, March 2016.

- **Jia Deng**, Jonathan Krause, Michael Stark, Li Fei-Fei. Leveraging the Wisdom of the Crowd for Fine-Grained Recognition. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 2016.
- Yu-Wei Chao, Zhan Wang, Yugeng He, Jiaxuan Wang, **Jia Deng**. HICO: A Benchmark for Recognizing Human-Object Interactions in Images. *International Conference on Computer Vision (ICCV)*, 2015.
- Nan Ding, **Jia Deng**, Kevin Murphy, Hartmut Neven. Probabilistic Label Relation Graphs with Ising Models. *International Conference on Computer Vision (ICCV)*, 2015.
- Vignesh Ramanathan, Congcong Li, **Jia Deng**, Wei Han, Zhen Li, Kunlong Gu, Yang Song, Samy Bengio, Charles Rosenberg, Li Fei-Fei. Learning semantic relationships for better action retrieval in images. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2015.
- Yu-Wei Chao, Zhan Wang, Rada Mihalcea, **Jia Deng**. Mining Semantic Affordances of Visual Object Categories. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2015.
- Vicente Ordonez, Wei Liu, **Jia Deng**, Yejin Choi, Alexander C. Berg, Tamara L. Berg. Predicting Entry-Level Categories. *International Journal of Computer Vision (IJCV)*, 2015.
- Olga Russakovsky\*, **Jia Deng**\*, Hao Su, Jonathan Krause, Sanjeev Satheesh, Sean Ma, Zhiheng Huang, Andrej Karpathy, Aditya Khosla, Michael Bernstein, Alexander C. Berg, Li Fei-Fei. ImageNet Large Scale Visual Recognition Challenge. *International Journal of Computer Vision (IJCV)*, 2015. (\*equal contribution).
- **Jia Deng**, Nan Ding, Yangqing Jia, Andrea Frome, Kevin Murphy, Samy Bengio, Yuan Li, Hartmut Neven, Hartwig Adam. Large-Scale Object Classification Using Label Relation Graphs. *European Conference on Computer Vision (ECCV)*, 2014. **Best Paper Award**.
- Jonathan Krause, Timit Gebre, **Jia Deng**, Jia Li, Li Fei-Fei. Learning Features and Parts for Fine-Grained Recognition. *International Conference on Pattern Recognition (ICPR)*, 2014.
- **Jia Deng**, Olga Russakovsky, Jonathan Krause, Michael Bernstein, Alexander C. Berg and Li Fei-Fei. Scalable Multi-Label Annotation. *ACM Conference on Human Factors in Computing Systems (CHI)*, 2014.
- Jonathan Krause, Michael Stark, **Jia Deng**, Li Fei-Fei. 3D Object Representations for Fine-Grained Categorization. *ICCV '13 Workshop on 3D Representation and Recognition (3dRR-13)*, 2013.
- Olga Russakovsky, **Jia Deng**, Zhiheng Huang, Alex Berg, Li Fei-Fei. Detecting avocados to zucchinis: what have we done, and where are we going? *International Conference on Computer Vision (ICCV)*, 2013.
- Vicente Ordonez, **Jia Deng**, Yejin Choi, Alex Berg, Tamara Berg. From Large Scale Image Categorization to Entry-Level Categories. *International Conference on Computer Vision (ICCV)*, 2013. **Marr Prize (Best Paper Award)**.
- **Jia Deng**, Jonathan Krause, and Li Fei-Fei. Fine-Grained Crowdsourcing for Fine-Grained Recognition. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2013.
- Hao Su, **Jia Deng**, and Li Fei-Fei. Crowdsourcing Annotations for Visual Object Detection. *AAAI Human Computation Workshop*, 2012.
- **Jia Deng**, Jonathan Krause, Alex Berg, and Li Fei-Fei. Hedging Your Bets: Optimizing Accuracy-Specificity Trade-offs in Large-Scale Visual Recognition. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2012.
- **Jia Deng**, Sanjeev Satheesh, Alex Berg, and Li Fei-Fei. Fast and Balanced: Efficient Label Tree

Learning for Large Scale Object Recognition. *Advances in Neural Information Processing Systems (NeurIPS)*, 2011.

- **Jia Deng**, Alex Berg, and Li Fei-Fei. Hierarchical Semantic Indexing for Large Scale Image Retrieval. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2011.
- **Jia Deng**, Alex Berg, Kai Li, and Li Fei-Fei. What does classifying more than 10,000 image categories tell us? *European Conference on Computer Vision (ECCV)*, 2010.
- **Jia Deng**, Wei Dong, Richard Socher, Li-Jia Li, Kai Li and Li Fei-Fei. ImageNet: A Large-Scale Hierarchical Image Database. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2009.
- Brandon Collins, **Jia Deng**, Kai Li, and Li Fei-Fei. Towards scalable dataset construction: An active learning approach. *European Conference on Computer Vision (ECCV)*, 2008.
- Tim Weyrich, **Jia Deng**, Connelly Barnes, Szymon Rusinkiewicz, and Adam Finkelstein. Digital Bas-Relief From 3D Scenes. *ACM Transactions on Graphics (Proc. SIGGRAPH)*. 2007.

#### TECHNICAL REPORTS

- Jonathan C. Stroud, David A. Ross, Chen Sun, **Jia Deng**, Rahul Sukthankar. D3D: Distilled 3D Networks for Video Action Recognition. *arXiv:1812.08249*, 2018.
- Zachary Teed, **Jia Deng**. DeepV2D: Video to Depth with Differentiable Structure from Motion. *arXiv:1812.04605*, 2018.
- Dawei Yang, Chaowei Xiao, Bo Li, **Jia Deng**, Mingyan Liu. Realistic Adversarial Examples in 3D Meshes. *arXiv:1810.05206*, 2018.
- Weifeng Chen, Shengyi Qian, **Jia Deng**. Learning Single-Image Depth from Videos using Quality Assessment Networks. *arXiv:1806.09573*, 2018.

#### SERVICE

#### PROGRAM COMMITTEE

- **Area Chair**. Neural Information Processing Systems (NeurIPS) 2018
- **Area Chair**. Computer Vision and Pattern Recognition (CVPR) 2016,2018,2019
- **Program Co-chair**. BigVision Workshop 2012, 2014, 2015, 2016
- **Program Co-chair**. CVPR workshop on Computer Vision and Human Computation 2014
- **Co-Organizer**. Bay Area Vision Meeting 2012
- **Co-Organizer**. ImageNet Large Scale Visual Recognition Challenge 2010-2017

#### REVIEWER

- International Journal of Computer Vision (IJCV).
- Transactions on Pattern Recognition and Machine Intelligence (TPAMI)
- Journal of Machine Learning Research (JMLR)
- Transactions on Image Processing (TIP)
- Transactions on Multimedia (TMM)
- Computer Aided Design (CAD)
- Neural Information Processing Systems (NeurIPS) 2012-2017
- European Conference on Computer Vision (ECCV) 2012-2018
- International Conference on Computer Vision (ICCV) 2013-2017
- AAAI Conference on Artificial Intelligence (AAAI) 2014
- International Conference and Exhibition on Computer Graphics and Interactive Techniques (SIGGRAPH) 2013

- ACM Symposium on User Interface Software and Technology (UIST) 2014
- ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp) 2014

PANELIST

- National Science Foundation 2015, 2017, 2018

TALKS

- Learning Single-Image 3D in the Wild
  - CVPR18 WebVision Workshop 06/2018

Teaching Computers to See and Think

- AITutorial, Tsinghua University, Beijing 11/2018
- Samsung Advanced Institute of Technology, South Korea 8/2018
- Academia Sinica, Taiwan 8/2018
- National Tsing Hua University, Taiwan 8/2018
- National Cheng Kung University, Taiwan 8/2018
- CVPR18 Look-into-Person workshop 6/2018
- Amazon, Seattle 6/2018
- SJTU-UM Joint Institute, Shanghai 5/2018
- Carnegie Mellon University 4/2018
- CS Colloquium, Princeton University 3/2018
- University of Maryland, College Park 2/2018
- Michigan State University 1/2018
- UC Berkeley 12/2017
- PIXL Lunch, Princeton University 11/2017
- GRASP Seminar, UPenn 11/2017
- Cornell Tech, NYC 11/2017
- ICCV17 second workshop on Closing the Loop Between Vision and Language 10/2017
- University College London, UK 10/2017
- University of Oxford, UK 10/2017
- Southern California Machine Learning Symposium, Los Angeles, CA 10/2017
- Google, Mountain View, CA 10/2017

Pixels to Graphs

- ECCV18 Person-In-Context Workshop 9/2018
- ICCV17 PoseTrack Workshop 10/2017
- SVL Lab, Stanford University 06/2017

Toward Deep Geometric Image Understanding

- CMU VASC Seminar 04/2017
- Computational Visual Media Conference, Tianjin, China 04/2017

Going Deeper in Semantics and Mid-level Vision

- University of Texas, Austin 10/2016
- Stanford University 04/2016
- Google, Mountain View, CA 04/2016
- University of California, Berkeley 04/2016

Knowledge Driven Recognition of Objects and Actions

- Wayne State University 02/2016
- Chinese Academy of Sciences, Beijing, China 08/2015
- ICML 2015 Extreme Classification Workshop, Lille, France 07/2015
- Amazon, Seattle, WA 05/2015
- DVMM Lab, Columbia University 03/2015
- Department of Statistics Seminar, University of Michigan 03/2015

Learning Visual Models with a Knowledge Graph  
 - NeurIPS 2014 workshop: Representation and Learning Methods for Complex Outputs 12/2014

Large-Scale Image Understanding Powered by Data, Crowd, and Knowledge  
 - General Motors R&D, Warren, MI 05/2015  
 - Tsinghua University, Beijing, China 11/2014

Large-Scale Object Recognition Using a Knowledge Graph  
 - NEC Labs America, Cupertino, CA 10/2014

Advancing Visual Recognition with Big Data  
 - CMU VASC Seminar 02/2014

Large-Scale Visual Recognition Powered by Big Data.  
 - Microsoft Research Redmond 05/2013  
 - Adobe Research, San Jose, California 03/2013  
 - Visual Computing Lunch, UC Berkeley 03/2013  
 - NEC Labs America, Cupertino, CA 03/2013  
 - Computer Vision Laboratory, University Southern California 03/2013  
 - Center for Vision, Cognition, Learning, and Art, University of California Los Angeles 03/2013

Building the Forest to See Trees: Toward Large Scale Visual Recognition  
 - GE Research, San Ramon, California 11/2012  
 - Google Research, Mountain View, California 03/2012  
 - SRI International Sarnoff, Princeton, New Jersey 01/2012  
 - GRASP Laboratory, University of Pennsylvania 01/2012  
 - Computational Vision Group, California Institute of Technology 01/2012  
 - Institute for Pure & Applied Mathematics, University of California Los Angeles 01/2012

TEACHING Princeton COS 429: Computer Vision Fall 2018  
 UMich EECS 542: Advanced Topics in Computer Vision Fall 2014, Fall 2015, Fall 2017  
 UMich EECS 442: Computer Vision Winter 2015-2018  
 UMich EECS 445: Introduction to Machine Learning Fall 2016

PAST APPOINTMENTS **Assistant Professor** Ann Arbor, MI  
 Computer Science and Engineering, University of Michigan 9/2014-8/2018

**Visiting Assistant Professor** Ann Arbor, MI  
 Computer Science and Engineering, University of Michigan 9/2013-8/2014

**Postdoc (consulting)** Mountain View, CA  
 Google Inc. 10/2013-8/2014

**Visiting Scholar** Stanford, CA  
 Stanford University 10/2013-8/2014

**Postdoctoral Scholar** Stanford, CA  
 Stanford University 7/2012-10/2013

**Visiting Student** Stanford, CA  
 Stanford University 9/2009-6/2012

**Research Intern** Mountain View, CA  
 Microsoft Research Silicon Valley 6/2010-9/2010

**Software Engineering Intern**  
Google Inc.

Mountain View, CA  
6/2007-9/2007