

# Joseph J. Lim

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RESEARCH Deep Learning, Computer Vision, and Robotics  
INTERESTS

POSITIONS **University of Southern California** **2017-Present**  
*Tenure-track Assistant Professor, Computer Science Department*

**Stanford University - AI Lab** **2016**  
*Postdoctoral Scholar, Advisor: Fei-Fei Li*

**Massachusetts Institute of Technology - CSAIL** **Fall 2015**  
*Postdoctoral Associate, Advisor: Bill Freeman*

EDUCATION **Massachusetts Institute of Technology, Cambridge, MA** **Graduated Sept. 2015**  
*Ph.D. in Electrical Engineering and Computer Science*

- Advisor: Antonio Torralba
- Thesis Committee: Jitendra Malik (UC Berkeley) and Bill Freeman (MIT)

**Massachusetts Institute of Technology, Cambridge, MA** **Graduated June 2012**  
*S.M. in Electrical Engineering and Computer Science*

- Advisor: Antonio Torralba

**University of California, Berkeley, Berkeley, CA** **Graduated May 2009**  
*B.A. in Computer Science*

- Overall GPA: 3.97/4.00
- Highest Honors (*Summa Cum Laude*)

RESEARCH **Stanford University - AI Lab** **2016**  
EXPERIENCE *Postdoctoral Scholar, Advisor: Fei-Fei Li*

**Massachusetts Institute of Technology - CSAIL** **Fall 2015**  
*Postdoctoral Associate, Advisor: Bill Freeman*

**Massachusetts Institute of Technology - CSAIL** **2009-2015**  
*Graduate Research Assistant, Advisor: Antonio Torralba*

**Microsoft Research - Interactive Visual Media, Redmond, Washington, USA** **2012**  
*Research Intern, Mentors: Piotr Dollar and Larry Zitnick*  
Developed an algorithm for learning mid-level representation used for contour and object detections, published in CVPR 2013. There is a pending patent on this summer project.

**Adobe - Creative Technologies Lab, San Francisco, California USA** **2010**  
*Research Intern, Mentor: Lubomir Bourdev*  
Developed a human part segmentation algorithm (e.g. segmenting face, torso, lower body, etc) by combining top-down and bottom-up evidences.

**University of California - Berkeley** **2007-2009**  
*Undergraduate Research Assistant*, Advisor: Jitendra Malik  
Developed algorithms for object recognition using low-level segmentation.

AWARDS

2nd Best Presentation Award, MIT CSAIL Student Workshop (CSW) **2014**

National Science Foundation (NSF) Graduate Fellowship **2009-2014**

UC Berkeley Outstanding Undergraduate Research Award **2009**

ACM International Collegiate Programming Contest (Team: UCB BLUE) - World Final **2009**

Haas Scholar - Fellowship for Independent Research (\$12,600) **2008-2009**

Undergraduate Research Opportunities Program - Research Grant **Fall 2006**

USA Computing Olympiad - Finalist and All-American Team

PEER-REVIEWED PUBLICATIONS

24. Shao-Hua Sun, Minyoung Huh, Yuan-Hong Liao, Ning Zhang, and **Joseph J. Lim**. Multi-view to Novel view: Synthesizing Novel Views with Self-Learned Confidence. In *European Conference on Computer Vision (ECCV) 2018*.

23. Shao-Hua Sun\*, Hyeonwoo Noh\*, Sriram Somasundaram, and **Joseph J. Lim**. Neural Program Synthesis from Diverse Demonstration Videos. In *International Conference on Machine Learning (ICML) 2018*.

22. Kuan Fang\*, Te-Lin Wu\*, Daniel Yang, Silvio Savarese, and **Joseph J. Lim**. Demo2Vec: Reasoning Object Affordances from Online Videos. In *IEEE Computer Vision and Pattern Recognition (CVPR), 2018*.

21. Donglai Wei, **Joseph J. Lim**, Andrew Zisserman, and William Freeman. Learning and Using the Arrow of Time. In *IEEE Computer Vision and Pattern Recognition (CVPR), 2018*.

20. Jiayuan Mao, Honghua Dong, and **Joseph J. Lim**. Universal Agent for Disentangling Environments and Tasks. In *International Conference on Learning Representations (ICLR), 2018*.

19. Karol Hausman, Yevgen Chebotar, Stefan Schaal, Gaurav Sukhatme, and **Joseph J. Lim**. Multi-Modal Imitation Learning from Unstructured Demonstrations using Generative Adversarial Nets. In *Advances in Neural Information Processing Systems (NIPS), 2017*.

18. De-An Huang, **Joseph J. Lim**, Li Fei-Fei, and Juan Carlos. Unsupervised Visual-Linguistic Reference Resolution in Instructional Videos. In *IEEE Computer Vision and Pattern Recognition (CVPR), 2017*.

17. Yuke Zhu, **Joseph J. Lim**, and Li Fei-Fei. Knowledge Acquisition for Visual Question Answering via Iterative Querying. In *IEEE Computer Vision and Pattern Recognition (CVPR), 2017*.

16. Yuke Zhu, Roozbeh Mottaghi, Eric Kolve, **Joseph J. Lim**, Abhinav Gupta, Li Fei-Fei, and Ali Farhadi. Target-driven Visual Navigation in Indoor Scenes using Deep Reinforcement Learning. In *IEEE International Conference on Robotics and Automation (ICRA), 2017*.

15. Kyle Olszewski, **Joseph J. Lim**, Shunsuke Saito, and Hao Li. High-Fidelity Facial and Speech Animation for VR HMDs. In *ACM SIGGRAPH Asia, 2016*.

14. Jiajun Wu\*, Tianfan Xue\*, **Joseph J. Lim**, Yuandong Tian, Josh Tenenbaum, Antonio Torralba, and William Freeman. Single Image 3D Interpreter Network. In *European Conference on Computer Vision (ECCV)*, 2016.
13. Jiajun Wu, **Joseph J. Lim**, Hongyi Zhang, Josh Tenenbaum, and William Freeman. Physics 101: Learning Physical Object Properties from Unlabeled Videos. In *British Machine Vision Conference (BMVC)*, 2016.
12. Jiajun Wu\*, Ilker Yildirim\*, **Joseph J. Lim**, William Freeman, and Josh Tenenbaum. Galileo: Perceiving Physical Object Properties by Integrating a Physics Engine with Deep Learning. In *Advances in Neural Information Processing Systems (NIPS)*, 2015.
11. **Joseph J. Lim**\*, Phillip Isola\*, and Edward Adelson. Discovering States and Transformations in Image Collections. In *IEEE Computer Vision and Pattern Recognition (CVPR)*, 2015.
10. **Joseph J. Lim**, Aditya Khosla, and Antonio Torralba. FPM: Fine Pose Parts-Based Model with 3D CAD Models. In *European Conference on Computer Vision (ECCV)*, 2014.
9. **Joseph J. Lim**\*, Aditya Khosla\*, Byoung Kwon An\*, and Antonio Torralba. Looking Beyond the Visible Scene. In *IEEE Computer Vision and Pattern Recognition (CVPR)*, 2014.
8. **Joseph J. Lim**, Hamed Pirsiavash, and Antonio Torralba. Parsing IKEA Objects: Fine Pose Estimation. In *IEEE International Conference on Computer Vision (ICCV)*, 2013.
7. **Joseph J. Lim**, C. Lawrence Zitnick, and Piotr Dollar. Sketch Tokens: A Learned Mid-level Representation for Contour and Object Detection. In *IEEE Computer Vision and Pattern Recognition (CVPR)*, 2013.
6. **Joseph J. Lim**, Ruslan Salakhutdinov, and Antonio Torralba. Transfer Learning by Borrowing Examples for Multiclass Object Detection. In *Advances in Neural Information Processing Systems (NIPS)*, 2011.
5. Pablo Arbelaez, Bong-Gyoon Han, Dieter Typke, **Joseph J. Lim**, Robert M. Glaeser, Jitendra Malik. Experimental Evaluation of Support Vector Machine-based and Correlation-based Approaches to Automatic Particle Selection. *Journal of Structural Biology* 2011. doi:10.1016/j.jsb.2011.05.017.
4. Myung Jin Choi, **Joseph J. Lim**, Antonio Torralba, Alan S. Willsky. Exploiting Hierarchical Context on a Large Database of Object Categories. In *Computer Vision and Pattern Recognition (CVPR)*, 2010.
3. **Joseph J. Lim**, Pablo Arbelaez, Chunhui Gu, Jitendra Malik. Context by Region Ancestry. In *IEEE International Conference on Computer Vision (ICCV)*, 2009.
2. Chunhui Gu, **Joseph J. Lim**, Pablo Arbelaez, Jitendra Malik. Recognition using Regions. In *IEEE Computer Vision and Pattern Recognition (CVPR)*, 2009.
1. Max Welling and **Joseph J. Lim**. A Distributed Message Passing Algorithm for Sensor Localization. In *International Conference on Artificial Neural Networks*, 2007.

PROFESSIONAL EXPERIENCE	<p><b>Microsoft Research - Interactive Visual Media</b>, Redmond, Washington, USA    <b>2012</b> <i>Research Intern</i></p> <p><b>Adobe - Creative Technologies Lab</b>, San Francisco, California USA    <b>2010</b> <i>Research Intern</i></p> <p><b>Google</b>, Mountain View, California USA    <b>2009</b> <i>Software Engineer</i></p> <p><b>JavaGround</b>, Irvine, California USA    <b>2006</b> <i>Tool Developer</i></p> <p><b>Microsoft Corporation</b>, Redmond, Washington USA    <b>2006</b> <i>Software Design Engineer Intern</i></p>
ACADEMIC EXPERIENCE	<p><b>Guest Lecturer</b>, Massachusetts Institute of Technology    <b>Fall 2015</b> 6.869 - Advances in Computer Vision</p> <p><b>IAP Course Instructor</b>, Massachusetts Institute of Technology    <b>Winter 2014</b> 6.S093 - Visual Recognition through Machine Learning Competition Lecturer Evaluation: 6.8/7.0</p> <p><b>Teaching Assistant</b>, Massachusetts Institute of Technology    <b>Spring 2010</b> 6.869 - Advances in Computer Vision: Learning and Interfaces</p> <p><b>Grader</b>, University of California - Berkeley    <b>Spring 2009</b> CS 188 - Introduction to Artificial Intelligence</p> <p><b>Grader</b>, University of California - Berkeley    <b>Fall 2008</b> CS 188 - Introduction to Artificial Intelligence</p> <p><b>Team Leader, Cal RoboCup</b>, University of California - Berkeley    <b>2007-2008</b> Served the CS team as the leader in the Cal Robocup group.</p> <p><b>Grader</b>, University of California - Berkeley    <b>Fall 2007</b> CS 61B - Data Structures and Algorithms</p>
PATENTS	<p>U.S. Patent Application, MS# 338110.01, "Learned Mid-level Representation for Contour and Object Detection" by P. Dollar, C.L. Zitnick, and J. Lim, filed Mar 11 2013.</p>
PROFESSIONAL ACTIVITY	<p>Organization:</p> <ul style="list-style-type: none"> <li>• <b>Co-organizer - 2nd Workshop on Visual Understanding for Interaction (VUI)</b> at IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2017</li> <li>• <b>Co-organizer - 1st Workshop on Bridges to 3D Vision workshop proposal</b> at IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2017</li> <li>• <b>Co-organizer - 1st Workshop on 3D Deep Learning</b> at Advances in Neural Information Processing Systems (NIPS) 2016</li> <li>• <b>Co-organizer - 1st Workshop on Object Understanding for Interaction (OUI)</b> at IEEE International Conference on Computer Vision (ICCV) 2015</li> <li>• <b>CMT Assistant</b> - IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2015</li> </ul>

Meta-Reviewer:

- IEEE International Conference on Computer Vision (ICCV) 2019

Reviewer:

- Springer International Journal of Computer Vision (IJCV) 2014-2015
- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI) 2014-2015
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2011-2018
- IEEE International Conference on Computer Vision (ICCV) 2011-2017
- European Conference on Computer Vision (ECCV) 2012-2018
- Advances in Neural Information Processing Systems (NIPS) 2016-2018
- International Conference on Learning Representations (ICLR) 2018-2019
- International Conference on Machine Learning (ICML) 2018-2019
- Robotics: Science and Systems Conference (RSS) 2018
- International Joint Conference on Artificial Intelligence (IJCAI) 2016
- ACM SIGGRAPH 2016

Committee:

- PC - Functionality, Physics, Intentionality and Causality workshop at CVPR 2017
- PC - Recovering 6D Object Pose workshop at ECCV 2016
- PC - 3D from a single image workshop at CVPR 2015
- PC - Storytelling with Images and Videos (VisStory) at ECCV 2014
- PC - Scene Understanding Workshop (SUNw) at CVPR 2013

MISC.

Languages: C/C++, Python, Java, Matlab, Javascript, PHP

Development Environment: Linux/Unix, Mac OS, and Windows.

Fluent in English and Korean (U.S. citizen)