

# Xiaolong Wang

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## Affiliation

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### University of California San Diego

Assistant Professor, Electrical and Computer Engineering

*July 2020 - present*

Affiliate Faculty, Contextual Robotics Institute, Center for Visual Computing

## Education

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### Carnegie Mellon University

Ph.D. in Robotics

Advisor: Prof. Abhinav Gupta

Pittsburgh, PA, USA

*2014 - 2019*

### Sun Yat-Sen University

M.S. in Computer Science

Advisor: Prof. Liang Lin

Guangzhou, China

*2011 - 2014*

### South China Agricultural University

B.S. in Computer Science

Guangzhou, China

*2007 - 2011*

## Academic Positions

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### Berkeley AI Research (BAIR), UC Berkeley

Postdoctoral Fellow (Supervisor: Prof. Alexei A. Efros and Prof. Trevor Darrell.)

*Sep 2019 - June 2020*

### Berkeley AI Research (BAIR), UC Berkeley

Visitor (Supervisor: Prof. Alexei A. Efros)

*Jun 2018 - Nov 2018*

### Facebook AI Research (FAIR)

Intern (Supervisor: Dr. Kaiming He and Dr. Ross Girshick)

*May 2017 - Nov 2017*

### Allen Institute for Artificial Intelligence (AI2)

Intern (Supervisor: Prof. Ali Farhadi)

*May 2015 - Aug 2015*

## Selected Awards

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- Facebook Fellowship *2018*
- Nvidia Fellowship *2017*
- Best Student Paper Award of ICME *2014*
- Google Scholarship *2013*
- ACM-ICPC World Finals, Honorable Mention *2010*

## Publications

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### Peer-Reviewed Conference Publications

- [32] Ruihan Yang, Huazhe Xu, Yi Wu, **Xiaolong Wang**  
*Multi-Task Reinforcement Learning with Soft Modularization*  
in Neural Information Processing Systems (NeurIPS), 2020.
- [31] Xueting Li, Sifei Liu, Shalini De Mello, Kihwan Kim, **Xiaolong Wang**, Ming-Hsuan Yang, Jan Kautz  
*Online Adaptation for Consistent Mesh Reconstruction in the Wild*

in Neural Information Processing Systems (NeurIPS), 2020.

- [30] Jingwei Xu, Huazhe Xu, Bingbing Ni, Xiaokang Yang, **Xiaolong Wang**, Trevor Darrell  
*Hierarchical Style-based Networks for Motion Synthesis*  
in European Conference on Computer Vision (ECCV), 2020.
- [29] Yu Sun, **Xiaolong Wang**, Zhuang Liu, John Miller, Alexei A. Efros, Moritz Hardt  
*Test-Time Training with Self-Supervision for Generalization under Distribution Shifts*  
in International Conference on Machine Learning (ICML), 2020.
- [28] Haozhi Qi, Chong You, **Xiaolong Wang**, Yi Ma, Jitendra Malik.  
*Deep Isometric Learning for Visual Recognition*  
in International Conference on Machine Learning (ICML), 2020.
- [27] Joanna Materzynska, Tete Xiao, Roei Herzig, Huijuan Xu<sup>†</sup>, **Xiaolong Wang**<sup>†</sup>, Trevor Darrell<sup>†</sup>.  
*Something-Else: Compositional Action Recognition with Spatial-Temporal Interaction Networks*  
in Computer Vision and Pattern Recognition (CVPR), 2020.
- [26] Qian Long\*, Zihan Zhou\*, Abhinav Gupta, Fei Fang, Yi Wu<sup>†</sup>, **Xiaolong Wang**<sup>†</sup>  
*Evolutionary Population Curriculum for Scaling Multi-Agent Reinforcement Learning*  
in International Conference on Learning Representations (ICLR), 2020.
- [25] Xueting Li\*, Sifei Liu\*, Shalini De Mello, **Xiaolong Wang**, Jan Kautz, and Ming-Hsuan Yang  
*Joint-task Self-supervised Learning for Temporal Correspondence*  
in Neural Information Processing Systems (NeurIPS), 2019.
- [24] **Xiaolong Wang**\*, Allan Jabri\* and Alexei A. Efros  
*Learning Correspondence from the Cycle-consistency of Time*  
in Computer Vision and Pattern Recognition (CVPR), 2019.  
**(Oral Presentation)**
- [23] Xueting Li, Sifei Liu, Kihwan Kim, **Xiaolong Wang**, Ming-Hsuan Yang, and Jan Kautz  
*Putting Humans in a Scene: Learning Affordance in 3D Indoor Environments*  
in Computer Vision and Pattern Recognition (CVPR), 2019.
- [22] Wei Yang, **Xiaolong Wang**, Ali Farhadi, Abhinav Gupta, and Roozbeh Mottaghi  
*Visual Semantic Navigation using Scene Priors*  
in International Conference on Learning Representations (ICLR), 2019.
- [21] **Xiaolong Wang** and Abhinav Gupta  
*Videos as Space-Time Region Graphs*  
in European Conference on Computer Vision (ECCV), 2018.
- [20] Tian Ye, **Xiaolong Wang**, James Davidson, and Abhinav Gupta  
*Interpretable Intuitive Physics Model*  
in European Conference on Computer Vision (ECCV), 2018.
- [19] **Xiaolong Wang**, Ross Girshick, Abhinav Gupta, and Kaiming He  
*Non-local Neural Networks*  
in Computer Vision and Pattern Recognition (CVPR), 2018.
- [18] **Xiaolong Wang**\*, Yufei Ye\*, and Abhinav Gupta  
*Zero-shot Recognition via Semantic Embeddings and Knowledge Graphs*  
in Computer Vision and Pattern Recognition (CVPR), 2018.
- [17] Wei Yang , Wanli Ouyang, **Xiaolong Wang**, Jimmy Ren, Hongsheng Li, and Xiaogang Wang  
*3D Human Pose Estimation in the Wild by Adversarial Learning*  
in Computer Vision and Pattern Recognition (CVPR), 2018.
- [16] **Xiaolong Wang**, Kaiming He, and Abhinav Gupta

*Transitive Invariance for Self-supervised Visual Representation Learning*  
in International Conference on Computer Vision (ICCV), 2017.

- [15] Yuan Yuan, Xiaodan Liang, **Xiaolong Wang**, Dit-Yan Yeung, and Abhinav Gupta  
*Temporal Dynamic Graph LSTM for Action-driven Video Object Detection*  
in International Conference on Computer Vision (ICCV), 2017.
- [14] **Xiaolong Wang\***, Rohit Girdhar\*, and Abhinav Gupta  
*Binge Watching: Scaling Affordance Learning from Sitcoms*  
in Computer Vision and Pattern Recognition (CVPR), 2017.  
(Spotlight Oral Presentation)
- [13] **Xiaolong Wang**, Abhinav Shrivastava, and Abhinav Gupta  
*A-Fast-RCNN: Hard Positive Generation via Adversary for Object Detection*  
in Computer Vision and Pattern Recognition (CVPR), 2017.
- [12] **Xiaolong Wang** and Abhinav Gupta  
*Generative Image Modeling using Style and Structure Adversarial Networks*  
in European Conference on Computer Vision (ECCV), 2016.
- [11] Gunnar A. Sigurdsson, Gül Varol, **Xiaolong Wang**, Ivan Laptev, Ali Farhadi, and Abhinav Gupta  
*Hollywood in Homes: Crowdsourcing Data Collection for Activity Understanding*  
in European Conference on Computer Vision (ECCV), 2016.
- [10] **Xiaolong Wang**, Ali Farhadi, and Abhinav Gupta  
*Actions ~ Transformations*  
in Computer Vision and Pattern Recognition (CVPR), 2016.
- [9] **Xiaolong Wang** and Abhinav Gupta  
*Unsupervised Learning of Visual Representations using Videos*  
in International Conference on Computer Vision (ICCV), 2015.
- [8] **Xiaolong Wang**, David F. Fouhey, and Abhinav Gupta  
*Designing Deep Networks for Surface Normal Estimation*  
in Computer Vision and Pattern Recognition (CVPR), 2015.
- [7] **Xiaolong Wang**, Liliang Zhang, Liang Lin, Zhujin Liang, and Wangmeng Zuo  
*Deep Joint Task Learning for Generic Object Extraction*  
in Neural Information Processing Systems (NIPS), 2014.
- [6] Keze Wang, **Xiaolong Wang**, and Liang Lin  
*Deep Structured Models for 3D Human Activity Recognition*  
in ACM International Conference on Multimedia (MM), 2014.  
(Full Paper, Oral Presentation)
- [5] Zhujin Liang, **Xiaolong Wang**, Rui Huang, and Liang Lin  
*An Expressive Deep Model for Parsing Human Action from a Single Image*  
in IEEE International Conference on Multimedia and Expo (ICME), 2014.  
(Oral Presentation, Best Student Paper Award)
- [4] **Xiaolong Wang**, Liang Lin, Lichao Huang, and Shuicheng Yan  
*Incorporating Structural Alternatives and Sharing into Hierarchy for Multiclass Object Recognition and Detection*  
in Computer Vision and Pattern Recognition (CVPR), 2013.
- [3] **Xiaolong Wang** and Liang Lin  
*Dynamical And-Or Graph Learning for Object Shape Modeling and Detection*  
in Neural Information Processing Systems (NIPS), 2012.
- [2] Liang Lin, **Xiaolong Wang**, Wei Yang, and Jian-Huang Lai  
*Learning Contour-Fragment-based Shape Model with And-Or Tree Representation*  
in Computer Vision and Pattern Recognition (CVPR), 2012.
- [1] Wei Yang, **Xiaolong Wang**, Liang Lin, Chengying Gao

*Interactive CT image segmentation with online discriminative learning*  
in International Conference on Image Processing (ICIP), 2011.

### Peer-Reviewed Journal Publications

- [1] Liang Lin, **Xiaolong Wang**, Wei Yang, and JianHuang Lai  
*Discriminatively Trained And-Or Graph Models for Object Shape Detection*  
in Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2015.

### Talks

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- *Self-Supervised Learning for Perception and Action in Time*  
Invited Talk in Nvidia Aug 2020
- *Self-Supervised Learning for Correspondence and 3D Reconstruction in Time*  
ECCV 2020 Workshop on 4D Vision Aug 2020
- *Learning Long-term Visual Dynamics*  
ECCV 2020 Tutorial on Learning Representations via Graph-structured Networks Jun 2020
- *Beyond Human Supervision: Learning with Self-Supervision and Self-Play*  
Invited Talk in Pixel Cafe, University of California San Diego Sep 2019
- *Scaling Learning with Self-Supervision and Self-Play*  
BAIR/BDD Computer Vision Workshop, University of California, Berkeley Sep 2019
- *Learning and Reasoning with Visual Correspondence in Time*  
University of California San Diego Mar 2019  
University of Illinois at Urbana-Champaign Mar 2019  
University of Massachusetts Amherst Mar 2019
- *Exploiting Redundancy for Learning Visual Representations*  
Invited Talk in University of California, Los Angeles Oct 2018
- *Looking into Recognition in the Deep Era*  
Computer Vision Seminar, University of California, Berkeley Oct 2018
- *Adversaries for Detection and Action*  
CVPR 2018 Tutorial on GANs Jun 2018
- *Videos as Space-Time Region Graphs*  
CVPR 2018 Workshop on Fine-grained Instructional Video underERstanding (FIVER) Jun 2018
- *Exploiting Redundancy for Learning Visual Representations*  
Invited Talk in University of California, Berkeley May 2018  
Invited Talk in The Jiangmen May 2018  
PhD Thesis Proposal, Carnegie Mellon University Feb 2018
- *Non-local Neural Networks*  
Grad Fellow FastForward, NVIDIA's GPU Technology Conference (GTC) Mar 2018
- *Learning Visual Representations for Object Detection*  
AI Seminar sponsored by Apple Oct 2017
- *Binge Watching: Scaling Affordance Learning from Sitcoms*  
Spotlight Presentation, CVPR Jul 2017
- *Actions ~ Transformations*  
Allen Institute for Artificial Intelligence (AI2) Aug 2016
- *Unsupervised Learning of Visual Representations using Videos*  
PhD Speaking Qualifier, Carnegie Mellon University Apr 2016
- *Designing Deep Networks for Surface Normal Estimation*  
Mid-Atlantic Computer Vision (MACV) Workshop Mar 2015

## Academic Services

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### Teaching

Intro to Visual Learning (UCSD ECE 285)

Deep Learning and Application (UCSD ECE 175)

### Area Chair

International Conference on Computer Vision (ICCV)

Computer Vision and Pattern Recognition (CVPR)

The AAAI Conference on Artificial Intelligence (AAAI)

### Tutorial and Workshop

Organizer of the Workshop on Sensing, Understanding and Synthesizing Humans in ECCV 2020

Organizer of the Tutorial on Learning Representations via Graph-structured Networks in CVPR 2019, 2020.

Organizer of the Workshop on Multi-Modal Learning from Videos in CVPR 2019.

### Journal Reviewer

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

International Journal of Computer Vision (IJCV)

IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)

IEEE Transactions on Neural Networks and Learning Systems (TNNLS)

### Conference Reviewer

Computer Vision and Pattern Recognition (CVPR)

European Conference on Computer Vision (ECCV)

International Conference on Computer Vision (ICCV)

International Conference on Robotics and Automation (ICRA)

Conference on Robot Learning (CoRL)