

## Mr. Yuanjun Xiong

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Google scholar: <https://scholar.google.co.uk/citations?user=ojKsx6AAAAAJ&hl=en>

**Current Status** I am currently a principal scientist in Amazon Rekognition, exploring long-term evolution of massive-scale computer vision systems.

**EDUCATION** *PhD in Information Engineering* August 2012 - July 2016  
Department of Information Engineering  
The Chinese University of Hong Kong, Hong Kong  
Research areas: machine learning, computer vision, deep learning.  
Thesis: *Visual Understanding by Learning from Multiple Data Aspects*

*Bachelor of Engineering* August 2008 - July 2012  
Department of Automation  
Tsinghua University, Beijing, China, 2012  
Thesis: *Dynamic 3D Human Face Aging Emulation*

*Bachelor of Economics, secondary degree* August 2009 - July 2012  
School of Economics and Management  
Tsinghua University, Beijing, China, 2012

**EXPERIENCE** *Principal Scientist* October 2017 - Present  
Amazon Rekognition, Seattle, United States.

*Postdoctoral Fellow* August 2016 - September 2017  
Department of Information Engineering, CUHK, Hong Kong

*PhD Student* Fall 2012 - July 2016  
Department of Information Engineering, CUHK, Hong Kong

*Visiting Researcher* January 2015 - April 2015  
Google Inc., Mountain View, CA, United States.

**PUBLICATIONS** Sijie Yan, **Yuanjun Xiong**, Kaustav Kundu, Shuo Yang, Siqi Deng, Meng Wang, Wei Xia, Stefano Soatto. “Positive-Congruent Training: Towards Regression-Free Model Updates,” In *Computer Vision and Pattern Recognition (CVPR)*, 2021.

Rahul Duggal, Hao Zhou, Shuo Yang, **Yuanjun Xiong**, Wei Xia, Zhuowen Tu, Stefano Soatto. “Compatibility-Aware Heterogeneous Visual Search,” In *Computer Vision and Pattern Recognition (CVPR)*, 2021.

Tianchen Zhao, Xiang Xu, Mingze Xu, Hui Ding, **Yuanjun Xiong**, Wei Xia. “Learning Self-Consistency for Deepfake Detection,” In *International Conference on Computer Vision (ICCV)*, 2021.

Guha Balakrishnan, **Yuanjun Xiong**, Wei Xia, Pietro Perona. “Towards Causal

Benchmarking of Algorithm Bias with Counterfactual Synthesis,” In *European Conference on Computer Vision (ECCV)*, 2020.

Haodong Duan, Yue Zhao, **Yuanjun Xiong**, Wentao Liu, Dahua Lin. “Omni-sourced Webly-supervised Learning for Video Recognition,” In *European Conference on Computer Vision (ECCV)*, 2020.

Jingbo Wang, Sijie Yan, **Yuanjun Xiong**, Dahua Lin. “Motion Guided 3D Pose Estimation from Videos,” In *European Conference on Computer Vision (ECCV)*, 2020.

Yantao Shen, **Yuanjun Xiong**, Wei Xia, Stefano Soatto. “Towards Backward Compatible Representation Learning,” In *Computer Vision and Pattern Recognition (CVPR)*, 2020.

Yue Zhao, **Yuanjun Xiong**, Limin Wang, Zhirong Wu, Xiaoou Tang, Dahua Lin. “Temporal Action Detection with Structured Segment Networks,” In *International Journal of Computer Vision (IJCV)*, 2019.

Brais Martinez, Davide Modolo, **Yuanjun Xiong**, Joseph Tighe. “Finding the Action using Spatial-Temporal Discriminative Filter Banks,” In *IEEE International Conference on Computer Vision (ICCV)*, 2019.

Sijie Yan, Zhizhong Li **Yuanjun Xiong**, Huahan Yan, Dahua Lin. “Convolutional Sequence Generation for Skeleton-Based Action Synthesis,” In *IEEE International Conference on Computer Vision (ICCV)*, 2019.

Yue Zhao, **Yuanjun Xiong**, Dahua Lin. “Trajectory Convolution for Action Recognition,” In *Neural Information Processing Systems (NeurIPS)*, 2018.

Limin Wang, **Yuanjun Xiong**, Zhe Wang, Yu Qiao, Dahua Lin, Xiaoou Tang, Luc Van Gool. “Temporal Segment Networks for Action Recognition in Videos,” In *IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI)*, 2018.

Yue Zhao, **Yuanjun Xiong**, Dahua Lin. “Recognize Actions by Disentangling Components of Dynamics,” In *Computer Vision and Pattern Recognition (CVPR)*, 2018.

Zhirong Wu, **Yuanjun Xiong**, Stella Yu, Dahua Lin. “Unsupervised Feature Learning via Non-Parametric Instance-level Discrimination,” In *Computer Vision and Pattern Recognition (CVPR)*, 2018.

Kai Chen, Jiaqi Wang, Shuo Yang, Xingcheng Zhang, **Yuanjun Xiong**, Chen Change Loy, Dahua Lin. “Optimizing Video Object Detection via a Scale-Time Lattice,” In *Computer Vision and Pattern Recognition (CVPR)*, 2018.

Sijie Yan, **Yuanjun Xiong**, Dahua Lin. “Spatial Temporal Graph Convolutional Networks for Skeleton-Based Action Recognition,” In *Thirty-Second AAAI Conference on Artificial Intelligence (AAAI)*, 2018.

Yue Zhao, **Yuanjun Xiong**, Limin Wang, Zhirong Wu, Xiaoou Tang, Dahua Lin. “Temporal Action Detection with Structured Segment Networks,” In *IEEE International Conference on Computer Vision (ICCV)*, 2017.

Limin Wang, **Yuanjun Xiong**, Dahua Lin, Luc Van Gool. “UntrimmedNets for Weakly Supervised Action Recognition and Detection,” In *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017

Yue Zhao, Bowen Zhang, Zhirong Wu, Shuo Yang, Lei Zhou, Sijie Yan, Limin Wang,

**Yuanjun Xiong**, Dahua Lin, Yu Qiao, Xiaoou Tang ‘CUHK & ETHZ & SIAT Submission to ActivityNet Challenge 2017,” In *ActivityNet Challenge, CVPR*, 2017.

Shuo Yang, **Yuanjun Xiong**, Chen Change Loy, Xiaoou Tang. “Face Detection through Scale-Friendly Deep Convolutional Networks,” In *CoRR*, abs/1706.02863, 2017.

**Yuanjun Xiong**, Yue Zhao, Limin Wang, Dahua Lin, Xiaoou Tang. “A Pursuit of Temporal Accuracy in General Activity Detection,” In *CoRR*, abs/1703.02716, 2015.

Limin Wang, **Yuanjun Xiong**, Zhe Wang, Yu Qiao, Dahua Lin, Xiaoou Tang, Luc Van Gool. “Temporal Segment Networks: Towards Good Practices for Deep Action Recognition,” In *Europe Conference on Computer Vision (ECCV)*, 2016

**Yuanjun Xiong**, Kai Zhu, Dahua Lin, Xiaoou Tang. “Recognize Complex Events from Static Images by Fusing Deep Channels,” In *Computer Vision and Pattern Recognition (CVPR)*, 2015.

Limin Wang, **Yuanjun Xiong**, Zhe Wang, Yu Qiao. “Towards Good Practices for Very Deep Two-Stream ConvNets,” In *CoRR*, abs/1507.02159, 2015.

**Yuanjun Xiong**, Wei Liu, Deli Zhao, Xiaoou Tang. “Zeta Hull Pursuits: Learning Non-convex Data Hulls,” In *Advances in Neural Information Processing Systems (NIPS)*, 2014.

**Yuanjun Xiong**, Wei Liu, Deli Zhao, Xiaoou Tang. “Face Recognition via Archetype Hull Ranking,” In *IEEE International Conference on Computer Vision (ICCV)*, 2013.

Limin Wang, Sheng Guo, Weilin Huang, **Yuanjun Xiong**, Yu Qiao. “Knowledge Guided Disambiguation for Large-Scale Scene Classification with Multi-Resolution CNNs,” accepted to *IEEE Transaction on Image Processing (TIP)*, 2017.

**Yuanjun Xiong**, Limin Wang, Zhe Wang, Bowen Zhang, Hang Song, Wei Li, Dahua Lin, Yu Qiao, Luc Van Gool, Xiaoou Tang. “CUHK & ETHZ & SIAT Submission to ActivityNet Challenge 2016,” In *CoRR*, abs/ 1608.00797, 2016.

Limin Wang, **Yuanjun Xiong**, Zhe Wang, Yu Qiao. “CUHK & SIAT submission for THUMOS’15 action recognition challenge,” In *THUMOS’15 Action Recognition Challenge*, 2015.

Wanli Ouyang, Ping Luo, Xingyu Zeng, Shi Qiu, Yonglong Tian, Hongsheng Li, Shuo Yang, Zhe Wang, **Yuanjun Xiong**, Chen Qian, Zhenyao Zhu, Ruohui Wang, Chen Change Loy, Xiaogang Wang, Xiaoou Tang. “DeepID-Net: multi-stage and deformable deep convolutional neural networks for object detection,” In *CoRR*, abs/1409.3505, 2014.

**PROFESSIONAL ACTIVITIES** Organizer, Tutorial on Cross Model Compatibility in conjunction with ICCV 2021  
Organizer, Tutorial on Video Modeling held in conjunction with CVPR 2020  
Organizer, WIDER Challenge Workshop on ICCV 2019.  
Organizer, WIDER Challenge Workshop on ECCV 2018.  
Senior Program Committee, AAAI Conference on Artificial Intelligence (AAAI).  
Conference reviewer for CVPR, ICCV, ECCV, NeuRIPs, ICML, AAAI.  
Journal reviewer for IJCV, TPAMI, TIP, CSVT, etc.

**HONORS & AWARDS** Runner-up, ActivityNet Large-Scale Activity Recognition Challenge June, 2017

Winner, ActivityNet Large-Scale Activity Recognition Challenge	June, 2016
3rd-Place, ImageNet Large-Scale Visual Recognition Challenge	September, 2016
5-th, THUMOS15 Untrimmed Video Action Recognition Challenge	June, 2015
Runner-Up, ImageNet Large-Scale Visual Recognition Challenge	August, 2014
Research Fellowship, Chinese University of Hong Kong	September 2016
Hong Kong PhD Fellowship, The Research Grants Council	2012 - 2016
Gold Medal, ACM ICPC (Asia Regional), Beijing	October 2011
Academic Excellence Scholarship, Tsinghua University	September 2010
First Prize in Beijing College Physics Contest, Beijing	March 2010
Huang Yicong Couple Scholarship (Top 5%), Tsinghua University	September 2009

## PROJECTS

*Open-MMLAB Open Source Toolboxes* 2019

MMAAction Github: <https://github.com/open-mmlab/mmaaction>

MMSkeleton Github: <https://github.com/open-mmlab/mmskeleton>

As part the OpenMMLAB initiative, I co-authored the open-source toolboxes of MMAAction and MMSkeleton. They received over 3000 stars on Github and have been used by both research community on this topic and companies providing activity understanding services.

*ActivityNet Large Scale Activity Recognition Challenge 2017* Jul, 2017

Result site: <http://activity-net.org/challenges/2017/program.html>

I led the team of CUHK&ETH&SIAT. We achieved 2nd places in all three participated tasks (untrimmed video classification, trimmed video classification, and temporal action detection) in the challenge.

*ActivityNet Large Scale Activity Recognition Challenge 2016* Jul, 2016

Result site: <http://activity-net.org/challenges/2016/program.html>

I led the team of CUHK&ETH&SIAT. We achieved a mean AP of 93.23% in recognizing 20000 untrimmed web videos, securing the first place in the challenge.

*ImageNet Large-Scale Visual Recognition Challenge (ILSVRC) 2016* Sep, 2016

Our team won the 3rd place in the image classification and localization task. My software is recognized by two champion teams in other two tasks (object detection, video object detection).

*Fast Parallel Caffe* Jul, 2015

Website link: <https://github.com/yjxiong/caffe>

I implemented a modified Caffe toolbox enabling high efficiency parallel training for deep CNN models. It is used by multiple winning teams in ILSVRC 2014/2015/2016.

*Web Image Dataset for Event Recognition (WIDER)* Jun, 2015

Website link: [http://personal.ie.cuhk.edu.hk/~xy012/event\\_recog/WIDER/](http://personal.ie.cuhk.edu.hk/~xy012/event_recog/WIDER/)

We built a large-scale dataset for researching event recognition in still images. I wrote the framework for data collection, annotation, and conducting baseline experiments.

*THUMOS Challenge 2015* Jun, 2015

Result site: <http://www.thumos.info/results.html>

Our team (CUHK & SIAT) ranked 5-th in THUMOS15 untrimmed video action recognition challenge.

*Mobile User Authentication* Jul, 2015

I worked in Google ATAP as a visiting researcher leading the visual recognition team of Project Abacus. The project aims to build a continuous mobile user authentication system for android devices.

*ImageNet Large-Scale Visual Recognition Challenge (ILSVRC) 2014* Aug, 2014

Result site: <http://www.image-net.org/challenges/LSVRC/2014/results>

Our team (CUHK DeepID-Net) won the runner-up position in the LSVRC 2014 object detection challenge. I led the development of our optimized training frameworks.

**COMPUTER  
SKILLS**

*Languages & Software:* C/C++, CUDA, Python, MATLAB, PHP, Java, L<sup>A</sup>T<sub>E</sub>X.  
*Operating Systems:* Linux, Windows.