Fanyi Xiao

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Research Interests

I am interested in computer vision and machine learning, with a focus on designing models to effectively learn from videos in order to better understand videos (with tasks like recognition, detection and segmentation) and beyond (e.g., images and sounds).

Education

University of California Davis, Computer Science Dept., Davis, CA, USA

Ph.D. student, Computer Science

- Advisor: Prof. Yong Jae Lee

Carnegie Mellon University, Robotics Institute, Pittsburgh, PA, USA

M.S., Robotics, 2014

- Advisors: Prof. Martial Hebert and Prof. Yaser Sheikh
- Thesis: *Model Recommendation for Large Scale Exemplar-based Object Detection*

Central South University, Computer Science Department, Changsha, China

B.S., Computer Science, 2012

- Thesis: *Facial Expression Analysis with Active Appearance Model*

Publications

[1] Fanyi Xiao, Yong Jae Lee, Kristen Grauman, Jitendra Malik, and Christoph Feichtenhofer. Audiovisual slowfast networks for video recognition. 2019. (Under submission).

[2] Daniel Bolya, Chong Zhou, Fanyi Xiao, and Yong Jae Lee. Yolact++: Better real-time instance segmentation. 2019. (Under submission).

[3] Fanyi Xiao, Haotian Liu, and Yong Jae Lee. Identity from here, pose from there: Self-supervised disentanglement and generation of objects using unlabeled videos. In *International Conference on Computer Vision (ICCV)*, 2019.

[4] Daniel Bolya, Chong Zhou, Fanyi Xiao, and Yong Jae Lee. Yolact: Real-time instance segmentation. In *International Conference on Computer Vision (ICCV)*, 2019. (Oral presentation).

[5] Xitong Yang, Xiaodong Yang, Ming-Yu Liu, Fanyi Xiao, Larry S Davis, and Jan Kautz. Step: Spatio-temporal progressive learning for video action detection. In *Computer Vision and Pattern Recognition (CVPR)*, 2019.

[6] Fanyi Xiao and Yong Jae Lee. Video object detection with an aligned spatial-temporal memory. In *European Conference on Computer Vision (ECCV)*, 2018.

[7] Wenjian Hu, Krishna Kumar Singh*, Fanyi Xiao*, Jinyoung Han, Chen-Nee Chuah, and Yong Jae Lee (* equal contribution). Who will share my image? predicting the content diffusion path in online social networks. In *ACM International Conference on Web Search and Data Mining (WSDM)*, 2018.

[8] Fanyi Xiao, Leonid Sigal, and Yong Jae Lee. Weakly-supervised visual grounding of phrases with linguistic structures. In *Computer Vision and Pattern Recognition (CVPR)*, 2017.

[9] Fanyi Xiao and Yong Jae Lee. Track and segment: An iterative unsupervised approach for video object proposals. In *Computer Vision and Pattern Recognition (CVPR)*, 2016. (Spotlight presentation).

[10] Krishna Singh, Fanyi Xiao, and Yong Jae Lee. Track and transfer: Watching videos to simulate strong human supervision for weakly-supervised object detection. In *Computer Vision and Pattern Recognition (CVPR)*, 2016.

[11] Fanyi Xiao and Yong Jae Lee. Discovering the spatial extent of relative attributes. In *International Conference on Computer Vision (ICCV)*, 2015. (Oral presentation).

[12] Fanyi Xiao and Martial Hebert. Efficient model evaluation with bilinear separation model. In *Winter Conference on Applications of Computer Vision (WACV)*, 2015.

[13] Zhiding Yu, Chunjing Xu, Deyu Meng, Fanyi Xiao, Wenbo Liu, and Jianzhuang Liu. Transitive distance clustering with k-means duality. In *International Conference on Computer Vision and Pattern Recognition (CVPR)*, 2014.

[14] Iljoo Baek, Taylor Stine, Denver Dash, Fanyi Xiao, Yaser Ajmal Sheikh, Yair Movshovitz-Attias, Mei Chen, Martial Hebert, and Takeo Kanade. Physical querying with multi-modal sensing. In *Winter Conference on Applications of Computer Vision (WACV)*, 2014.

Awards

- Google Cloud Platform Research Grant, 2019
- Best Graduate Researcher Award, CS Dept. of UC Davis, 2018
- Azure Research Award, Microsoft, 2017
- Graduate Fellowship, UC Davis, 2015
- AWS Research Grant, Amazon Web Services, Inc., 2015
- Excellent Undergraduate Thesis, CSU, 2012
- Top Grade Scholarship (University-wide highest honor, 0.8%), CSU, 2010
- Sunward Scholarship (0.4%), Sunward Corporation, 2010
- 1st Grade Scholarship (6%), CSU, 2009
- National Scholarship (1%), Ministry of Education of China, 2009

Experience

Facebook AI Research (FAIR), Menlo Park, CA

Summer Intern **June 2019 - Nov 2019**

- An audiovisual video understanding architecture for recognition, detection and multi-modal self-supervised video representation learning. [Under submission]

NVIDIA Research, Santa Clara, CA

Summer Intern **July 2017 - Oct 2017**

- An iterative action tube detection method for action detection. [CVPR 2019]

Disney Research, Pittsburgh, PA

Summer Intern **June 2016 - Sept 2016**

- Weakly supervised vision-language alignment (i.e., producing segmentation masks for free-form language inputs) by exploiting linguistic structure. [CVPR 2017]

Skills

- Programming: Python, C/C++, Lua, Matlab, Java
- Misc: PyTorch, Torch7, Caffe, Caffe2, Linux, LaTeX

Related Graduate Courses	• CMU: Computer Vision / Machine Learning / Convex Optimization Math Fundamentals for Robotics / Learning-based Methods in Vision Mechanics of Manipulation • UC Davis: Visual Recognition
Service	• Reviewer, Computer Vision and Pattern Recognition (CVPR), 2018-20 • Reviewer, European Conference on Computer Vision (ECCV), 2020 • Reviewer, International Conference on Computer Vision (ICCV), 2019 • Program Committee, AAAI Conference on Artificial Intelligence (AAAI), 2019 • Reviewer, Asian Conference on Computer Vision (ACCV), 2018 • Reviewer, Winter Conference on Applications of Computer Vision (WACV), 2015-18