

# Yang Wang

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<b>Highlights</b>	5+ years of experience on computer vision research and application, focusing on video understanding <ul style="list-style-type: none"><li>• Video understanding: highlight detection, action &amp; context separation, temporal modeling, graph modeling. Published in CVPR, FG, BMVC, WACV.</li><li>• Human hand detection: context modeling. Published in ICCV.</li><li>• Image/video enhancement: GIF color dequantization, video interpolation, real noise denoising. Published in CVPR, AAAI.</li><li>• Internship experience at Megvii, Kwai, and Facebook AI.</li></ul>	
<b>Education</b>	<b>Stony Brook University (SBU)</b> Ph.D. in Computer Vision <ul style="list-style-type: none"><li>• Adviser: Prof. Minh Hoai Nguyen</li></ul>	<b>9/2014-5/2020</b>
	<b>University of Science and Technology of China (USTC)</b> B.E. in Electronic Engineering	<b>9/2009-7/2013</b>
<b>Experience</b>	<b>Perception Software Engineer @ Waymo</b> <ul style="list-style-type: none"><li>• Topic: Make cars see and understand.</li></ul>	<b>6/2020-Present</b>
	<b>Research Internship @ Kwai Y-Lab (Palo Alto)</b> <ul style="list-style-type: none"><li>• Host: Haibin Huang</li><li>• Topic: Reinforcement Learning for Stroke-based Painting</li></ul>	<b>12/2019-1/2020</b>
	<b>Research Internship @ Facebook AI Research</b> <ul style="list-style-type: none"><li>• Host: Prof. Lorenzo Torresani, Gedas Bertasius</li><li>• Topic: Supervoxel Attention Graphs for Long-Range Video Modeling</li></ul>	<b>6/2019-9/2019</b>
	<b>Research Internship @ Megvii Research (Redmond)</b> <ul style="list-style-type: none"><li>• Host: Jue Wang (Director), Haibin Huang (Research Scientist)</li><li>• Topic: Color Dequantization and Temporal Interpolation of GIF images<ul style="list-style-type: none"><li>– proposed GIF2Video, the first learning-based method for enhancing the visual quality of GIFs in the wild; introduced two large datasets, namely GIF-Faces and GIF-Moments, for both training and evaluation.</li></ul></li></ul>	<b>5/2018-8/2018</b>
	<b>Research Assistant @ Computer Vision Lab, SBU</b> <ul style="list-style-type: none"><li>• Advisor: Prof. Minh Hoai Nguyen</li><li>• Topic: Video Understanding and Human Action Recognition<ul style="list-style-type: none"><li>– detect highlight action segments in videos</li><li>– separate human action from context using conjugate samples</li><li>– eigen evolution pooling for temporal feature aggregation</li></ul></li><li>• Topic: Object Detection, Unsupervised Learning, Visualization, etc.<ul style="list-style-type: none"><li>– human hand detection and orientation estimation in the wild</li></ul></li></ul>	<b>12/2014-5/2020</b>

- visualize the learning process of deep neural networks
- unsupervised learning of flow estimation network by watching videos

**Research @ Information Processing Center, USTC** **9/2012-6/2013**

- Advisor: Prof. Houqiang Li
- Topic: Video Super Resolution (B.E. Dissertation)
  - modeled imaging process (optical flow, blur kernel, down-sampling, noise) as a Bayesian network; derived formulation from MAP principle; solved optimization using IRLS and Conjugate Gradient approach.

**National University Innovation Program, China** **8/2012-3/2013**

- Advisor: Prof. Ao Li
- Topic: miRNA Target Prediction using Data-Driven Approach
  - mRNA-miRNA dataset collection by parsing mirTarbase webpage and Microarray data; feature selection from gene sequence and functional information using mRMR; significant improvement on miRNA target prediction.

**USTC-MSRA Smart Campus Program** **2/2012-6/2012**

- Topic: USTC Social Network
  - built a social network using UCHome; redesigned interface and functionality, enabling students to share posts, search books, follow classes, etc.

**USTC Robot Contest, Team Leader, Enter the Final** **6/2011-9/2011**

- Topic: Human-assisting Robot
  - built a prototype robot that assists blind people to walk at home and on street; our robot relies on assorted sensors (ultrasonic/infrared/color sensors) and can be controlled with voice commands (Lingyang-SPCE061A).

<b>Honor &amp; Award</b>	<b>CS Department Chair Fellowship, SBU</b>	9/2014
	<b>Research Fellowship, National University Student Innovation Program</b>	4/2013
	<b>Meritorious Winner, MCM (Mathematical Contest in Modeling)</b>	3/2013
	<b>GDC-Tech Outstanding Student Scholarship, USTC</b>	10/2012
	<b>Robot Game Contest, Enter the Final, Team Leader, USTC</b>	10/2011
	<b>Outstanding Student Scholarship, USTC</b>	9/2010
	<b>Physics Olympiad Second Prize, Shandong Province</b>	3/2009

**Skill** Programming Languages: Python, C/C++/Java  
 Libraries: PyTorch, Tensorflow, OpenCV

**Academic Service** **Conference Reviewer**

- CVPR 2018, 2019, 2020; ICCV 2019; ECCV 2018, 2020; AAI 2020, 2021;
- BMVC 2020; ACCV 2020; WACV 2021;
- ICCVW-RLQ 2019; CVPRW-MBCCV 2019; ICVGIP 2016, 2018;

**Student Mentorship, CS, SBU**

- Justin Zhang. Regional finalist of Siemens science competition. 2017
- Abhinand Sivaprasad. Regional finalist of Siemens science competition. 2015

- Selina Wang. Research on action boundary detection. 2015

#### Teaching Assistant, CS, SBU

- CSE-114/130: Introduction to Programming in Java/C
- CSE-214: Data Structures & Algorithms in Java
- CSE-512: Machine Learning

#### Publication

- (P1) **Yang Wang**, Gedas Bertasius, Tae-Hyun Oh, Abhinav Gupta, Minh Hoai, Lorenzo Torresani. “Supervoxel Attention Graphs for Long-Range Video Modeling”, *IEEE Winter Conference on Applications of Computer Vision (WACV 2021)*.
- (P2) **Yang Wang**, Vinh Tran, Gedas Bertasius, Lorenzo Torresani, Minh Hoai. “Attentive Action and Context Factorization”, *The British Machine Vision Conference (BMVC 2020)*.
- (P3) Yuqian Zhou, Jianbo Jiao, Haibin Huang, **Yang Wang**, Jue Wang, Honghui Shi, Thomas Huang. “When AWGN-based Denoiser Meets Blind Real Noise”, *AAAI Conference on Artificial Intelligence (AAAI 2020)*.
- (P4) Supreeth Narasimhaswamy, Zhengwei Wei, **Yang Wang**, Justin Zhang, Minh Hoai. “Contextual Attention for Hand Detection in the Wild”, *International Conference on Computer Vision (ICCV 2019)*.
- (P5) **Yang Wang**, Haibin Huang, Chuan Wang, Tong He, Jue Wang, Minh Hoai. “GIF2Video: Color Dequantization and Temporal Interpolation of GIF images”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2019)*.
- (P6) **Yang Wang**, Minh Hoai. “Pulling Actions out of Context: Explicit Separation for Effective Combination”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)*.
- (P7) **Yang Wang**, Vinh Tran, Minh Hoai. “Eigen-Evolution Dense Trajectory Descriptors”, *IEEE International Conference on Automatic Face and Gesture Recognition (FG 2018)*.
- (P8) Wen Zhong, Cong Xie, Yuan Zhong, **Yang Wang**, Wei Xu, Shenghui Cheng, Klaus Mueller. “Evolutionary Visual Analysis of Deep Neural Networks”, *International Conference on Machine Learning (ICML-W 2017) Workshop on Visualization for Deep Learning*.
- (P9) **Yang Wang**, Minh Hoai. “Improving Human Action Recognition by Non-action Classification”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2016)*.
- (P10) Ning Wang, **Yang Wang**, Yaodong Yang, Yi Shen, Ao Li. “miRNA Target Prediction Based on Gene Ontology”, *International Symposium on Computational Intelligence and Design (ISCID 2013)*.

#### Preprint

- (Q1) Vinh Tran, **Yang Wang**, Minh Hoai. “Back to the Future: Knowledge Distillation for Human Action Anticipation”,
- (Q2) **Yang Wang**, Vinh Tran, Minh Hoai. “Eigen Evolution Pooling for Human Action Recognition”,