Yapeng TIAN

Contact Information

The Department of Computer Science,
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Research Interests

- Multimodal Learning: audio-visual video understanding
- Low-Level Vision: image/video restoration

Education

University of Rochester, Rochester, USA — Sep. 2017 – Exp. 2022
- *PhD student* in The Department of Computer Science
- Advisor: *Prof.* Chenliang Xu

Tsinghua University, Beijing, China — Sep. 2014 – July 2017
- *M.E.* in The Department of Electronic Engineering
- GPA: 90.55/100 (Rank: 3/52)
- Outstanding Graduate of Tsinghua University Award (Top 1%)

Xidian University, Xi'an, China — Aug. 2009 – July 2013
- *B.E.* in Intelligence Science and Technology (School of Electronic Engineering)

Work Experience

Facebook — Sep. 2021 – Jan. 2022
- *Research Intern* in the Facebook Reality Lab
- Mentors: *Dr.* Alexander Richard

Adobe Research — May 2021 – Aug. 2021
- *Research Intern* in the Creative Intelligence Lab
- Mentors: *Dr.* Dingzeyu Li and *Prof.* Alexei A. Efros

Adobe Research — May 2019 – Nov. 2019
- *Research Intern* in the Creative Intelligence Lab
- Mentor: *Dr.* Dingzeyu Li

Research Experience

CS, University of Rochester — Aug. 2017 – Present
- *Research Assistant* with *Prof.* Chenliang Xu

EE, Tsinghua University — Mar. 2015 – Aug. 2017
- *Research Assistant* with *Prof.* Wenming Yang

SIAT, Chinese Academy of Sciences — Nov. 2016 – May 2017
- *Visiting Student* with *Prof.* Yu Qiao

Publications

CVPR, ICCV, and ECCV are premier computer vision conferences. According to Google Scholar Metrics, as of 09/2021, CVPR has h5-index 356, ECCV 197, and ICCV 184. CVPR is also ranked 1st of all journals and conferences in Engineering and Computer Science and 4th when considering everything else.

2021

Tiantian Wang, Sifei Liu, **Yapeng Tian**, Kai Li, and Ming-Hsuan Yang. Video Matting via Consistency-Regularized Graph Neural Networks. ICCV, 2021.

Yapeng Tian, and Chenliang Xu. Can audio-visual integration strengthen robustness under multimodal attacks? CVPR, 2021.

Yapeng Tian, Di Hu, and Chenliang Xu. Cyclic Co-Learning of Sounding Object Visual Grounding and Sound Separation. CVPR, 2021.

2020

Yapeng Tian, Dingzeyu Li, and Chenliang Xu. Unified Multisensory Perception: Weakly-Supervised Audio-Visual Video Parsing. ECCV, 2020. (**Spotlight**, top 5%)

Yapeng Tian, Yulun Zhang, Yun Fu, and Chenliang Xu. TDAN: Temporally Deformable Alignment Network for Video Super-Resolution. CVPR, 2020.

Xiaoyu Xiang*, **Yapeng Tian***, Yulun Zhang, Yun Fu, Jan Allebach^{+}, and Chenliang Xu^{+}. Zooming Slow-Mo: Fast and Accurate One-Stage Space-Time Video Super-Resolution. CVPR, 2020. (***Equal contribution.*** $^{+}$***Equal advising***)

Yulun Zhang, **Yapeng Tian**, Yu Kong, Bineng Zhong, Yun Fu. Residual Dense Network for Image Restoration. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2020.

Yapeng Tian, Chenliang Xu, Dingzeyu Li. Deep Audio Prior: Learning Sound Source Separation from a Single Audio Mixture. CVPR Workshop, 2020.

Yapeng Tian*, Di Hu*, Chenliang Xu. Co-Learn Sounding Object Visual Grounding and Visually Indicated Sound Separation in A Cycle. CVPR Workshop, 2020. (***Equal contribution.***)

Yapeng Tian, Dingzeyu Li, and Chenliang Xu. Weakly-Supervised Audio-Visual Video Parsing Toward Unified Multisensory Perception. CVPR Workshop, 2020.

2019

Wei Wang*, Ruiming Guo*, **Yapeng Tian**, and Wenming Yang. CFSNet: Toward a Controllable Feature Space for Image Restoration. ICCV, 2019. (***Equal contribution.***)

Yapeng Tian, Chenxiao Guan, Goodman Justin, Marc Moore, and Chenliang Xu. Audio-Visual Interpretable and Controllable Video Captioning. CVPR Workshop, 2019.

Yapeng Tian, Jing Shi, Bochen Li, Zhiyao Duan, and Chenliang Xu. Audio-Visual Event Localization in the Wild. CVPR Workshop, 2019. (**Oral**)

Wenming Yang, Xuechen Zhang, **Yapeng Tian**, Wei Wang, Jing-Hao Xue, Qingmin Liao. LCSCNet: Linear Compressing Based Skip-Connecting Network for Image Super-Resolution. IEEE Transactions Image Processing (TIP), 2019.

Wenming Yang, Xuechen Zhang, **Yapeng Tian**, Wei Wang, Jing-Hao Xue, Qingmin Liao. Deep Learning for Single Image Super-Resolution: A Brief Review. IEEE Transactions Multimedia (TMM), 2019.

2018

Yapeng Tian, Jing Shi, Bochen Li, Zhiyao Duan, and Chenliang Xu. Audio-Visual Event Localization in Unconstrained Videos. ECCV, 2018.

Yulun Zhang, **Yapeng Tian**, Yu Kong, Bineng Zhong, Yun Fu. Residual Dense Network for Image Super-Resolution. CVPR, 2018. (**Spotlight**, top 5%)

2017 and before

Timofte *et al.* NTIRE 2017 Challenge on Single Image Super-Resolution: Methods and Results. CVPR Workshop, 2017.

Xuesen Shang, Wenming Yang, Shuifa Sun, **Yapeng Tian**, Hai Chen, Kaiquan Chen. Adaptive Anchor-Point Selection for Single Image Super-Resolution. VCIP, 2017.

Wenming Yang,**Yapeng Tian**, Fei Zhou, Qingmin Liao, Hai Chen and Chenglin Zheng. Consistent Coding Scheme for Single-Image Super-Resolution Via Independent Dictionaries. IEEE Transactions Multimedia (TMM), 2016. (First student author)

Yapeng Tian, Fei Zhou, Wenming Yang, Xuesen Shang and Qingmin Liao. Anchored Neighborhood Regression based Single Image Super-Resolution from Self-Examples. ICIP, 2016.

Wenming Yang, **Yapeng Tian**, Fei Zhou, Tingrong Yuan, Xuesen Shang and Qingmin Liao. Single-Image Super-Resolution Using Clustering-Based Global Regression and Propagation Filtering. ACPR, 2015. (**Oral**) (First student author)

Teaching Experience

Teaching Assistant

- Spring 2019 CSC249/449: Machine Vision, University of Rochester
- Fall 2018 CSC577: Advanced Topics in Computer Vision, University of Rochester
- Spring 2018 CSC249/449: Machine Vision, University of Rochester
- Fall 2016: Digital image processing and its applications, Tsinghua University
- Spring 2016: Practice of digital image processing, Tsinghua University

Honors and Awards

- Top 10% of high-scoring reviewers for NeurIPS 2020
- Amazon Graduate Student Symposium, Seattle, USA (invited) 2019
- Outstanding Graduate of Tsinghua University (Top 1%) 2017
- Outstanding Master Thesis Award, Tsinghua University 2017
- National Scholarship (Top 2%), Tsinghua University, China 2016
- Second-class Scholarship, Tsinghua University, China 2015

Professional Activities

Organizing Committee

- Co-organizing Audio-Visual Scene Understanding Tutorial at CVPR 2021
- Co-organizing Audio-Visual Scene Understanding Tutorial at WACV 2021

Program Committee/Conference Reviewer

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2019-2022

- IEEE/CVF International Conference on Computer Vision (ICCV) 2019-2021
- European Conference on Computer Vision (ECCV) 2020
- Conference on Neural Information Processing Systems (NeurIPS) 2020-2021
- International Conference on Learning Representations (ICLR) 2021-2022
- AAAI Conference on Artificial Intelligence (AAAI) 2020-2022
- International Conference on Machine Learning (ICML) 2021
- Winter Conference on Applications of Computer Vision (WACV) 2020-2021
- Asian Conference on Computer Vision (ACCV) 2021

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2021
- IEEE Transactions on Multimedia (TMM) 2019-2021
- IEEE Transcations on Circuits and Systems for Video Technology (TCSVT) 2019-2021
- IEEE Access 2019-2021
- Signal Processing: Image Communication 2018-2021
- Computer Vision and Image Understanding (CVIU) 2020
- Computer Graphics Forum 2020

Attended Conferences and Symposiums

- CVPR, Virtual Conference June 2021
- ECCV, Virtual Conference Aug. 2020
- CVPR, Virtual Conference June 2020
- CVPR, Long Beach, USA June 2019
- Amazon Graduate Student Symposium, Seattle, USA Mar. 2019
- ECCV, Munich, Germany Sep. 2018
- IEEE International Conference on Image Processing, Phoenix, America Sep. 2016
- Asian Conference on Pattern Recognition, Kuala Lumpur, Malaysia Nov. 2015

Membership

- IEEE Student Member

University Services

- PhD Admission Committee (CS, University of Rochester) 2020-2021
- PhD Admission Committee (CS, University of Rochester) 2019-2020
- PhD Admission Committee (CS, University of Rochester) 2018-2019
- ASE Conference Travel Funding Grant Reviewer 2018

Student Advising

MS Students

- Yujian Wu (DS, University of Rochester) 2018
  Emotion-aware talking face generation
- Shurui Zhang (Optics, University of Rochester) 2018
  Video super-resolution

Undergraduates

- Rohan Sharma (University of Rochester) 2020-2021
  Audio-visual scene-aware captioning
- Sizhe Li (University of Rochester) 2020-2021
  Sounding object visual localization
- Yiyang Su (University of Rochester) 2020-2021
  Separating invisible sounds
- Chenxiao Guan (Xerox Fellow, University of Rochester) 2018
  Audio-visual video captioning
- Justin Goodman (REU, University of Maryland) 2018
  Audio-visual event localization and video captioning data collection
- Marc Moore (REU, Mississippi State University) 2018
  Audio-visual event localization and video captioning data collection

Skills

- Languages: English, Mandarin (native).
- Programming: Python, Pytorch, Keras, MATLAB, C/C++, Opencv, LaTeX.