Yulun ZHANG

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CONTACT INFORMATION

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RESEARCH INTERESTS

Machine Learning: deep learning.
Computer Vision: image restoration, style transfer

EDUCATION

Northeastern University, Boston, USA — Sep 2017 – Now

Ph.D., Department of ECE, College of Engineering

- Major in Computer Engineering
- Advisor: *Prof.* Yun Raymond Fu

Tsinghua University, Beijing, China — Sep 2014 – Jul 2017

M.E., Department of Automation

- Major in Control Engineering
- Advisor: *Prof.* Yongbing Zhang
- Overall GPA: 3.73/4.0, Major GPA: 3.75/4.0

The University of Sydney, Sydney, Australia — Jan 2016 – Jul 2016

Visiting Student, School of Electrical and Information Engineering

- Advisor: *Prof.* Dong Xu and Dr. Wen Li
- Research on metric learning with privileged information for visual recognition.

Xidian University, Xi'an, China — Sep 2009 – Jul 2013

B.S., School of Electronic Engineering

- Major in Intelligence Science and Technology
- Overall GPA: 3.36/4.0, Major GPA: 3.63/4.0

RESEARCH EXPERIENCE

SMILE lab, Northeastern University, Boston, USA — Sep 2017 – Now
Research Assistant — Supervisor: *Prof.* Yun Raymond Fu
Projects: Deep learning for image restoration and generation.

Adobe Research, San Jose, USA — May 2018 – Aug 2018
Research Intern Mentors: Chen Fang, Zhaowen Wang, Yilin Wang, Jimei Yang, Zhe Lin
Projects: Style transfer.

Tsinghua University, China — Mar 2014 – Jul 2017
Research Assistant — Supervisor: *Prof.* Yongbing Zhang
Projects: Image super-resolution and compression artifact removal via sparse/collaborative representation and deep learning.

SIAT, Chinese Academy of Sciences, China — Oct 2016 – Jun 2017
Research Assistant — Supervisor: *Prof.* Yu Qiao
Projects: Generative adversarial networks (GAN) for image restoration/generation.

Nanyang Technological University, Singapore — Nov 2015 – Jan 2016
Project Officer — Supervisor: *Dr.* Li Niu and *Prof.* Dong Xu
Projects: Exploiting privileged information from web data for visual recognition.

Xidian University, China — Jun – Aug 2012, Dec 2012 – Jun 2013
Position: Research Assistant — Supervisor: *Prof.* Shuyuan Yang
Projects: 1. Learning efficient features for action recognition in video domain. 2. Depth extraction from natural images using optical flow.

Journal Publications

(* means corresponding author and *Prof.* Yongbing Zhang is my master supervisor.)

1. Bineng Zhong, Bing Bai, Jun Li, **Yulun Zhang**, and Yun Fu, "Hierarchical Tracking by Reinforcement Learning based Searching and Coarse-to-fine Verifying," *IEEE Trans. on Image Processing* (**TIP**), 2018.

2. Qinqin Zhou, Bineng Zhong, **Yulun Zhang**, Jun Li, and Yun Fu, "Deep Alignment Network Based Multi-person Tracking with Occlusion and Motion Reasoning," *IEEE Trans. Multimedia* (**TMM**), 2018.

3. Yongbing Zhang, **Yulun Zhang***, Jian Zhang, Dong Xu, Yun Fu, Xiangyang Ji, and Qionghai Dai, "Collaborative Representation Cascade for Single Image Super-Resolution," *IEEE Trans. Syst., Man, Cybern., Syst.* (**TSMC**), 2017.

4. Yongbing Zhang, **Yulun Zhang***, Jian Zhang, and Qionghai Dai, "CCR: Clustering and Collaborative Representation for Fast Single Image Super-Resolution," *IEEE Trans. Multimedia* (**TMM**), vol. 18, no. 3, pp. 405–417, Mar. 2016.

Conference Publications

1. **Yulun Zhang**, Kunpeng Li, Kai Li, Bineng Zhong, and Yun Fu, "Residual Non-local Attention Networks for Image Restoration," *International Conference on Learning Representations* (**ICLR**), 2019. (Poster, 30%)

2. **Yulun Zhang**, Kunpeng Li, Kai Li, Lichen Wang, Bineng Zhong, and Yun Fu,, "Image Super-Resolution Using Very Deep Residual Channel Attention Networks," *European Conference on Computer Vision* (**ECCV**), 2018. (Poster, 29.4%)

3. **Yulun Zhang**, Yapeng Tian, Yu Kong, Bineng Zhong, and Yun Fu, "Residual Dense Network for Image Super-Resolution," *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2018. (**Spotlight, 6.6%**)

4. Kai Li, Zhengming Ding, Kunpeng Li, **Yulun Zhang**, and Yun Fu, "Support Neighbor Loss for Person Re-Identification," *ACM International Conference on Multimedia* (**ACM MM**), 2018. (Poster, 27 %)

5. **Yulun Zhang**, Yongbing Zhang, Jian Zhang, Haoqian Wang, and Qionghai Dai, "Adaptive Local Nonparametric Regression for Fast Single Image Super-Resolution," *IEEE International Conference on Visual Communications and Image Processing* (**VCIP**), 2015. (**Best Student Paper Award**, **1** out of over **313** submissions.)

6. **Yulun Zhang**, Kaiyu Gu, Yongbing Zhang, Jian Zhang, and Qionghai Dai, "Image Super-Resolution Based on Dictionary Learning and Anchored Neighborhood Regression with Mutual Incoherence," *IEEE International Conference on Image Processing* (**ICIP**), 2015.

7. **Yulun Zhang**, Yongbing Zhang, Jian Zhang, Haoqian Wang, and Qionghai Dai, "Single Image Super-Resolution via Iterative Collaborative Representation," *Pacific-Rim Conference on Multimedia* (**PCM**), 2015.

8. **Yulun Zhang**, Yongbing Zhang, and Qionghai Dai, "Single Depth Image Super-Resolution via A Dual Sparsity Model," *IEEE International Conference on Multimedia and Expo* (**ICME**) *Workshop on Hot Topics in 3D* (**Hot3D**), 2015.

9. Tao Shen, **Yulun Zhang**, Yongbing Zhang, Xingzheng Wang, Haoqian Wang, and Qionghai Dai, "Decompressed Video Enhancement via Accurate Regression Prior," *IEEE International Conference on Visual Communications and Image Processing* (**VCIP**), 2016.

10. Yihui Feng, Yongbing Zhang, **Yulun Zhang**, Tao Shen, and Qionghai Dai, "Decompressed Video Enhancement via Accurate Regression Prior," *IEEE International Conference on Visual Communications and Image Processing* (**VCIP**), 2016.

11. Radu Timofte, ..., **Yulun Zhang**, ..., et al., "NTIRE 2017 Challenge on Single Image Super-Resolution: Methods and Results," *IEEE CVPR New Trends in Image Restoration and Enhancement workshop and challenge on image super-resolution* (**CVPR NTIRE**), 2017. (Our team ranked 2^{nd} place.)

12. Wangpeng An, Haoqian Wang, **Yulun Zhang**, and Qionghai Dai, "Exponential Decay Sine Wave Learning Rate for Fast Deep Neural Network Training," *IEEE International Conference on Visual Communications and Image Processing* (**VCIP**), 2017.

Honors and Awards

- PhD Network Travel Grant, Northeastern University, USA, 2018
- Dean's Fellowship in Northeastern University, USA, 2017
- Shenzhen Universiade International Scholarship, China, 2017
- Excellent Graduate of Beijing, China, 2017
- Excellent Graduate of Department of Automation, Tsinghua University, 2017
- Excellent Master Thesis of Tsinghua University, 2017
- National Scholarship (Ministry of Education, China, Top 2%), 2016
- **Best Student Paper Award** at IEEE **VCIP**, 2015
- Jingzhi Research Award in Tsinghua University (Top 5%), 2015
- Second Prize Scholarship of Xidian University, 2011, 2012
- Advanced Individual of Social Work, 2011
- Third Prize Scholarship of Xidian University, 2010
- Advanced Individual of Civilized Dormitory Contribution, 2010
- Excellent Student in Xidian University (Top 5%), 2009

Professional Activities

Program Committee Member

- Association for the Advancement of Artificial Intelligence (**AAAI**), 2019

Reviewer

- Conferences: CVPR'19
- Journals: TIP, TCSVT, TMM, TNNLS, Neurocomputing, IEEE/CAA Journal of Automatica Sinica (JAS), IEEE Computational Intelligence Magazine (CIM)

Oral Presentations or Posters at Conferences

- Conference on Computer Vision and Pattern Recognition, Salt Lake City, Utah Jun 2018
- IEEE Int. Conf. on Visual Communications and Image Processing, Singapore Dec 2015
- IEEE International Conference on Image Processing, Quebec, Canada Sep 2015
- Pacific-Rim Conference on Multimedia, Gwangju, Korea Sep 2015
- IEEE International Conference on Multimedia and Expo, Torino, Italy Jun 2015

Memberships

- Student Member, IEEE
- Student Member, CCF

Teaching

- Teaching Assistant, Computer Vision, Northeastern University Fall 2018
- Teaching Assistant, Modern Signal Processing, Tsinghua University Fall 2015

Skills

- Programming: Matlab, Python, Lua, C/C++, LaTeX, Visual Studio, OpenCV, Linux.
- Deep learning tools: PyTorch, TensorFlow, Caffe, Torch, Keras, MatConvNet.