Yulun ZHANG Dec 20, 2018

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INFORMATION Northeastern University, Boston, MA, U.S. Tel: +1-(617)849-0935 Homepage: http://yulunzhang.com Google Scholar

RESEARCH Machine Learning: deep learning.

Interests 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 EngineeringAdvisor: *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, <u>Yulun Zhang</u>, 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

- 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, <u>Yulun Zhang</u>, 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.)
- 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 2nd 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 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.