Yulun ZHANG Jan 17, 2020

Contact 427 Richard Hall, 360 Huntington Ave., yulun100@gmail.com

> 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/video 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

• Overall GPA: 3.92/4.0

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

Information

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

Jun 2019 – Aug 2019

Research Intern Mentors: Zhifei Zhang, Stephen DiVerdi, Zhaowen Wang, Jose Echevarria Projects: Painting super-resolution.

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

Research Assistant

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

Supervisor: Prof. Yu Qiao

Projects: Generative adversarial networks (GAN) for image restoration/generation.

Nanyang Technological University, Singapore

Nov 2015 – Jan 2016

Supervisor: Dr. Li Niu and Prof. Dong Xu Project Officer

Projects: Exploiting privileged information from web data for visual recognition.

• Preprints

- 1. **Yulun Zhang**, Zhifei Zhang, Stephen DiVerdi, Zhaowen Wang, Jose Echevarria, and Yun Fu, "Texture Hallucination for Large-Scale Painting Super-Resolution", arXiv preprint arXiv:1912.00515, 2019
- 2. Yapeng Tian, **Yulun Zhang**, Yun Fu, and Chenliang Xu, "TDAN: Temporally Deformable Alignment Network for Video Super-Resolution", arXiv preprint arXiv:1812.02898, 2018

• Journal Papers

- 1. **Yulun Zhang**, Yapeng Tian, Yu Kong, Bineng Zhong, and Yun Fu, "Residual Dense Network for Image Restoration", *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 2020
- 2. Xiaole Zhao, **Yulun Zhang**, Tao Zhang, and Xueming Zou, "Channel Splitting Network for Single MR Image Super-Resolution", *IEEE Transactions on Image Processing* (**TIP**), 2019
- 3. Bineng Zhong, Bing Bai, Jun Li, **Yulun Zhang**, and Yun Fu, "Hierarchical Tracking by Reinforcement Learning based Searching and Coarse-to-fine Verifying", *IEEE Transactions on Image Processing* (**TIP**), 2019.
- 4. Qinqin Zhou, Bineng Zhong, **Yulun Zhang**, Jun Li, and Yun Fu, "Deep Alignment Network Based Multi-person Tracking with Occlusion and Motion Reasoning", *IEEE Transactions Multimedia* (**TMM**), 2018.
- 5. Yongbing Zhang, **Yulun Zhang***, Jian Zhang, Dong Xu, Yun Fu, Xiangyang Ji, and Qionghai Dai, "Collaborative Representation Cascade for Single Image Super-Resolution", *IEEE Transactions on Systems, Man, and Cybernetics: Systems* (**TSMC**), 2017.
- 6. Yongbing Zhang, Yulun Zhang*, Jian Zhang, and Qionghai Dai, "CCR: Clustering and Collaborative Representation for Fast Single Image Super-Resolution", *IEEE Transactions Multimedia* (TMM), vol. 18, no. 3, pp. 405–417, Mar. 2016.

• Conference Papers

- 1. Yu Yin, Joseph Robinson, **Yulun Zhang**, and Yun Fu, "Joint Super-Resolution and Alignment of Tiny Faces", *The AAAI Conference on Artificial Intelligence* (**AAAI**), 2020. (Poster, 20.6%)
- 2. Yulun Zhang, Chen Fang, Yilin Wang, Zhaowen Wang, Zhe Lin, Yun Fu, and Jimei Yang, "Multimodal Style Transfer via Graph Cuts", *IEEE International Conference on Computer Vision* (ICCV), 2019. (Poster, 25%)
- 3. Kunpeng Li, **Yulun Zhang**, Kai Li, Yuanyuan Li, and Yun Fu, "Visual Semantic Reasoning for Image-Text Matching", *IEEE International Conference on Computer Vision* (ICCV), 2019. (Oral, 4.3%)
- 4. Kunpeng Li, **Yulun Zhang**, Kai Li, Yuanyuan Li, and Yun Fu, "Attention Bridging Network for Knowledge Transfer", *IEEE International Conference on Computer Vision* (**ICCV**), 2019. (Poster, 25%)
- 5. Qinqin Zhou, Bineng Zhong, Xiangyuan Lan, Gan Sun, **Yulun Zhang**, Mengran Gou, "LRDNN: Local-refining based Deep Neural Network for Person Re-Identification with Attribute Discerning", *International Joint Conference on Artificial Intelligence* (IJCAI), 2019. (Oral, 13.7%)

- 6. **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, 31%)
- 7. **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%)
- 8. 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%)
- 9. 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 %)
- 10. 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)

• Workshop Papers

- Can Qin, Lichen Wang, Yulun Zhang, and Yun Fu, "Generatively Inferential Co-Training for Unsupervised Domain Adaptation", IEEE ICCV Real-World Recognition from Low-Quality Images and Videos (RLQ) workshop (ICCV Workshop), 2019. (Best Paper Award)
- 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 Workshop), 2017. (Our team ranked 2nd place.)

Honors and Awards

• Best Paper Award, RLQ workshop, IEEE ICCV,	2019
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• ICCV Travel Award,	2019
• ICLR Travel Award,	2019
• PhD Network Travel Grant, Northeastern University, USA,	2018, 2019
• 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
• Third Prize Scholarship of Xidian University,	2010

ACADEMIC SERVICE

Conference Reviewer

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- International Conference on Computer Vision (ICCV)
- European Conference on Computer Vision (ECCV)
- AAAI Conference on Artificial Intelligence (AAAI)
- International Joint Conferences on Artificial Intelligence (IJCAI)

Journal Reviewer

• IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Multimedia (TMM)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Computational Imaging (TCI)
- Computer Vision and Image Understanding (CVIU)

Teaching

Part-Time Instructor, Data Visualization, Northeastern University
Teaching Assistant, Computer Vision, Northeastern University
Teaching Assistant, Modern Signal Processing, Tsinghua University
Fall 2015

SKILLS

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