

CONTACT INFORMATION	Computer Vision Lab, ETH Zürich, Switzerland Homepage: https://yulunzhang.com	yulun100@gmail.com Tel: +41-779842713 Google Scholar, Github
RESEARCH INTERESTS	Machine Learning: deep learning. Computer Vision: image/video restoration (e.g., super-resolution, denoising, deblurring), synthesis (e.g., style transfer, texture transfer), biomedical image enhancement and analysis, deep model compression, computational imaging (e.g., spectral compressive imaging).	
EDUCATION	Northeastern University , Boston, USA	Sep 2017 – Aug 2021
	Ph.D., Department of ECE, College of Engineering	Advisor: <i>Prof. Yun Fu</i>
	<ul style="list-style-type: none"> • Major in Computer Engineering • Committee: <i>Prof. Octavia Camps</i>, <i>Prof. Hanspeter Pfister</i> 	
	Tsinghua University , Beijing, China	Sep 2014 – Jul 2017
	M.E., Department of Automation	Advisor: <i>Prof. Yongbing Zhang</i>
	<ul style="list-style-type: none"> • Major in Control Engineering 	
	Xidian University , Xi'an, China	Sep 2009 – Jul 2013
	B.S., School of Electronic Engineering	
	<ul style="list-style-type: none"> • Major in Intelligence Science and Technology 	
RESEARCH AND WORK EXPERIENCE	Computer Vision Lab, ETH Zürich, Switzerland	Oct 2021 – Now
	Postdoctoral Researcher	Advisor: <i>Prof. Luc Van Gool</i> , <i>Prof. Fisher Yu</i>
	Projects: Efficient image and video enhancement.	
	SMILE lab, Northeastern University, Boston, USA	Sep 2017 – Aug 2021
	Research Assistant	Advisor: <i>Prof. Yun Fu</i>
	Projects: Deep learning for image restoration and generation.	
	VCG, SEAS, Harvard University, Cambridge, USA	May 2020 – Aug 2020
	Fellow	Advisor: <i>Prof. Hanspeter Pfister</i>
	Projects: Biomedical image restoration and analysis.	
	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: Image style transfer.	
	Tsinghua University, China	Mar 2014 – Jul 2017
	Research Assistant	Advisor: <i>Prof. Yongbing Zhang</i>
	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	Advisor: <i>Prof. Yu Qiao</i>
	Projects: Generative adversarial networks (GAN) for image restoration/generation.	
	The University of Sydney, Australia	Jan 2016 – Jun 2016
	Visiting Student	Advisor: <i>Prof. Dong Xu</i> and <i>Prof. Wen Li</i>
	Projects: Research on metric learning with privileged information for visual recognition.	
	Nanyang Technological University, Singapore	Nov 2015 – Jan 2016
	Project Officer	Advisor: <i>Prof. Dong Xu</i> and <i>Prof. Li Niu</i>
	Projects: Exploiting privileged information from web data for visual recognition.	

Xidian University, China

Jun – Aug 2012, Dec 2012 – Feb 2014

Position: Research Assistant

Advisor: *Prof. Shuyuan Yang*

Projects: 1. Learning efficient features for action recognition in video domain. 2. Depth extraction from natural images using optical flow.

TEACHING

Instructor

- EECE5642 Data Visualization, Northeastern University, USA Spring 2020
- Work as an independent instructor throughout the whole semester

Teaching Assistant

- DS5500 Information Visualization: Applications in Data Science, Northeastern University, USA Spring and Summer 2021
- Instructor: *Prof. David Brady*
- EECE5639 Computer Vision, Northeastern University, USA Fall 2018
- Instructor: *Prof. Octavia Camps*
- Modern Signal Processing, Tsinghua University, China Fall 2015
- Instructor: *Prof. Yongbing Zhang*

HONORS AND AWARDS

- **Highlighted Reviewer**, ICLR, 2022
- **First Place Award**, Spectral Reconstruction from RGB challenge, IEEE CVPR, 2022
- **Global Top 100 Chinese Rising Stars in Artificial Intelligence**, Baidu, 2021
- Ranked top 20 in Baidu Scholarship, Baidu, 2020
- **Best Paper Award**, RLQ workshop, IEEE ICCV, 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
- **Second Place Award**, Single image SR challenge, IEEE CVPR, 2017
- National Scholarship (Ministry of Education, China, Top 2%), 2016
- **Best Student Paper Award**, 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

PUBLICATIONS

Citations: **14746**, *h-index: 37*, *i10-index: 71* (*Google Scholar*, November 23, 2023)

†: equal contribution; *: corresponding author; ‡: equal advising

Journal Papers

6 TPAMI, 1 IJCV, 7 TIP, 3 TNNLS, 2 TMM, 1 TSMC, 1 TCSVT, 1 TCYB

- [J22] Jiahua Dong, Hongliu Li, Yang Cong, Gan Sun, **Yulun Zhang**, and Luc Van Gool, “No One Left Behind: Real-World Federated Class-Incremental Learning”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2023. (IF: 24.314)
- [J21] Chunming He, Kai Li, Guoxia Xu, Jiangpeng Yan, Longxiang Tang, **Yulun Zhang**, Xiu Li, and Yaowei Wang, “HQQ-Net: Unpaired Medical Image Enhancement with High-Quality Guidance”, *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, 2023. (IF: 14.255)
- [J20] Yiqun Mei, Yuchen Fan, **Yulun Zhang**, Jiahui Yu, Yuqian Zhou, Ding Liu, Yun Fu, Thomas S. Huang, and Humphrey Shi, “Pyramid Attention Network for Image Restoration”, *International Journal of Computer Vision (IJCV)*, 2023. (IF: 13.369)
- [J19] Bin Xia, Yapeng Tian, **Yulun Zhang**, Yucheng Hang, Wenming Yang, and Qingmin Liao, “Meta-Learning based Degradation Representation for Blind Super-Resolution”, *IEEE Transactions on Image Processing (TIP)*, 2023. (IF: 11.041)

- [J18] Chang Liu, Henghui Ding, **Yulun Zhang**, and Xudong Jiang, “Multi-Modal Mutual Attention and Iterative Interaction for Referring Image Segmentation”, *IEEE Transactions on Image Processing (TIP)*, 2023. (IF: 11.041)
- [J17] Huan Wang[†], **Yulun Zhang**^{†,*}, Can Qin, Luc Van Gool, and Yun Fu, “Global Aligned Structured Sparsity Learning for Efficient Image Super-Resolution”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2023. (IF: 24.314)
- [J16] Qiang Wang, Gan Sun, Jiahua Dong, and **Yulun Zhang**, “PFDN: Pyramid Feature Decoupling Network for Single Image Deraining”, *IEEE Transactions on Image Processing (TIP)*, 2022. (IF: 11.041)
- [J15] Xiaotong Luo, Yanyun Qu, Yuan Xie, **Yulun Zhang**, Cuihua Li, and Yun Fu, “Lattice Network for Lightweight Image Restoration”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2022. (IF: 24.314)
- [J14] Weihao Xia, **Yulun Zhang**, Yujiu Yang*, Jing-Hao Xue, Bolei Zhou*, and Ming-Hsuan Yang*, “GAN Inversion: A Survey”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2022. (IF: 24.314)
- [J13] Kunpeng Li, **Yulun Zhang***, Kai Li, Yuanyuan Li, and Yun Fu, “Image-Text Embedding Learning via Visual and Textual Semantic Reasoning”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2022. (IF: 24.314)
- [J12] **Yulun Zhang**, Kunpeng Li, Kai Li, Gan Sun, Yu Kong, and Yun Fu, “Accurate and Fast Image Denoising via Attention Guided Scaling”, *IEEE Transactions on Image Processing (TIP)*, 2021. (IF: 11.041)
- [J11] Kai Li, Hongfu Liu, **Yulun Zhang**, Kunpeng Li, and Yun Fu, “Self-guided Deep Multi-view Subspace Clustering via Consensus Affinity Regularization”, *IEEE Transactions on Cybernetics (TCYB)*, 2021. (IF: 19.118)
- [J10] Haoqian Wang, Xiaowan Hu*, Xiaole Zhao, and **Yulun Zhang**, “Wide Weighted Attention Multi-Scale Network for Accurate MR Image Super-Resolution”, *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, 2021. (IF: 5.859)
- [J9] **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. (IF: 24.314)
- [J8] Kai Li, Zhengming Ding, Kunpeng Li, **Yulun Zhang**, and Yun Fu, “Vehicle and Person Re-Identification with Support Neighbor Loss”, *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, 2020. (IF: 14.255)
- [J7] Qinqin Zhou, Bineng Zhong, Xiangyuan Lan, Gan Sun, **Yulun Zhang**, Baochang Zhang, and Rongrong Ji, “Fine-Grained Spatial Alignment Model for Person Re-Identification with Focal Triplet Loss”, *IEEE Transactions on Image Processing (TIP)*, 2020. (IF: 11.041)
- [J6] Gan Sun, Yang Cong, **Yulun Zhang**, Guoshuai Zhao, and Yun Fu, “Continual Multi-view Task Learning via Deep Matrix Factorization”, *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, 2020. (IF: 14.255)
- [J5] 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. (IF: 11.041)
- [J4] 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)*, 2018. (IF: 11.041)

- [J3] 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. (IF: 8.182)
- [J2] 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. (IF: 11.471)
- [J1] Yongbing Zhang, **Yulun Zhang***, Jian Zhang, and Qionghai Dai, “CCR: Clustering and Collaborative Representation for Fast Single Image Super-Resolution”, *IEEE Transactions on Multimedia (TMM)*, 2015. (IF: 8.182)

Conference Papers

15 CVPR, 15 ICCV, 8 ECCV, 6 ICLR, 10 NeurIPS, 3 ICML, 3 AAAI, 4 IJCAI, 5 ACM MM, 1 ISBI, 1 MICCAI, 1 VCIP, 1 ICDM

- [C73] Haotong Qin[†], **Yulun Zhang^{†,*}**, Yifu Ding, Yifan Liu, Xianglong Liu*, Martin Danelljan, and Fisher Yu, “QuantSR: Accurate Low-bit Quantization for Efficient Image Super-Resolution”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2023
- [C72] Zheng Chen, **Yulun Zhang***, Ding Liu, Bin Xia, Jinjin Gu, Linghe Kong*, and Xin Yuan, “Hierarchical Integration Diffusion Model for Realistic Image Deblurring”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2023
- [C71] Yuanhao Cai, Yuxin Zheng, Jing Lin, Xin Yuan, **Yulun Zhang***, and Haoqian Wang*, “Binarized Spectral Compressive Imaging”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2023
- [C70] Chunming He, Kai Li, Yachao Zhang, Guoxia Xu, Longxiang Tang, **Yulun Zhang**, Zhenhua Guo, and Xiu Li, “Weakly-Supervised Concealed Object Segmentation with SAM-based Pseudo Labeling and Multi-scale Feature Grouping”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2023
- [C69] Yizhou Wang, Yue Kang, Can Qin, Huan Wang, Yi Xu, **Yulun Zhang**, and Yun Fu, “Momentum is All You Need for Data-Driven Adaptive Optimization”, *IEEE International Conference on Data Mining (ICDM)*, 2023.
- [C68] Zichun Wang[†], **Yulun Zhang[†]**, Debing Zhang, and Ying Fu, “Recurrent Self-Supervised Video Denoising with Denser Receptive Field”, *ACM International Conference on Multimedia (ACM MM)*, 2023.
- [C67] Hao Shen, Zhongqiu Zhao, **Yulun Zhang**, and Zhao Zhang, “Mutual Information-driven Triple Interaction Network for Efficient Image Dehazing”, *ACM International Conference on Multimedia (ACM MM)*, 2023.
- [C66] Zheng Chen, **Yulun Zhang***, Jinjin Gu, Linghe Kong*, Xiaokang Yang, and Fisher Yu, “Dual Aggregation Transformer for Image Super-Resolution”, *International Conference on Computer Vision (ICCV)*, 2023
- [C65] Jiamian Wang, Huan Wang, **Yulun Zhang***, Yun Fu, and Zhiqiang Tao*, “Iterative Soft Shrinkage Learning for Efficient Image Super-Resolution”, *International Conference on Computer Vision (ICCV)*, 2023
- [C64] Bin Xia, **Yulun Zhang**, Shiyin Wang, Yitong Wang, Xinglong Wu, Yapeng Tian, Wenming Yang, and Luc Van Gool, “DiffIR: Efficient Diffusion Model for Image Restoration”, *International Conference on Computer Vision (ICCV)*, 2023
- [C63] Yuanhao Cai, Hao Bian, Jing Lin, Haoqian Wang*, Radu Timofte, and **Yulun Zhang***, “Retinexformer: One-stage Retinex-based Transformer for Low-light Image Enhancement”, *International Conference on Computer Vision (ICCV)*, 2023

- [C62] Steven Tel, Zongwei Wu, **Yulun Zhang***, Barth Heyrman, Cedric D'Amboise, Radu Timofte, and Dominique Ginjac, "Alignment-free HDR Deghosting with Semantics Consistent Transformer", *International Conference on Computer Vision (ICCV)*, 2023
- [C61] Miaoyu Li, Ying Fu, Ji Liu, and **Yulun Zhang**, "Pixel Adaptive Deep Unfolding Transformer for Hyperspectral Image Reconstruction", *International Conference on Computer Vision (ICCV)*, 2023
- [C60] Chunming He, Kai Li, Guoxia Xu, **Yulun Zhang**, Runze Hu, Zhenhua Guo, and Xiu Li, "Degradation-Resistant Unfolding Network for Heterogeneous Image Fusion", *International Conference on Computer Vision (ICCV)*, 2023
- [C59] Zixiang Zhao, Haowen Bai, Yuanzhi Zhu, Jianshe Zhang, Shuang Xu, **Yulun Zhang**, Kai Zhang, Deyu Meng, Radu Timofte, and Luc Van Gool, "DDFM: Denoising Diffusion Model for Multi-Modality Image Fusion", *International Conference on Computer Vision (ICCV)*, 2023 (Oral)
- [C58] Zixiang Zhao, Jianshe Zhang, Xiang Gu, Chengli Tan, Shuang Xu, **Yulun Zhang**, Radu Timofte, and Luc Van Gool, "Spherical Space Feature Decomposition for Guided Depth Map Super-Resolution", *International Conference on Computer Vision (ICCV)*, 2023
- [C57] Longxiang Tang, Kai Li, Chunming He, **Yulun Zhang**, Xiu Li, "Source-Free Domain Adaptive Fundus Image Segmentation with Class-Balanced Mean Teacher", *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, 2023.
- [C56] Ruofan Zhang, Jinjin Gu, Haoyu Chen, Chao Dong, **Yulun Zhang**, Wenming Yang, "Crafting Training Degradation Distribution for the Accuracy-Generalization Trade-off in Real-World Super-Resolution", *International Conference on Machine Learning (ICML)*, 2023.
- [C55] Jiezhong Cao, Qin Wang, Yongqin Xian, Yawei Li, Bingbing Ni, Zhiming Pi, Kai Zhang*, **Yulun Zhang***, Radu Timofte, Luc Van Gool, "CiaoSR: Continuous Implicit Attention-in-Attention Network for Arbitrary-Scale Image Super-Resolution", *Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [C54] Zichun Wang, Ying Fu, Ji Liu, **Yulun Zhang**, "LG-BPN: Local and Global Blind-Patch Network for Self-Supervised Real-World Denoising", *Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [C53] Miaoyu Li, Ji Liu, Ying Fu, **Yulun Zhang**, Dejing Dou, "Spectral Enhanced Rectangle Transformer for Hyperspectral Image Denoising", *Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [C52] Bin Xia, Jingwen He, **Yulun Zhang**, Yitong Wang, Yapeng Tian, Wenming Yang, Luc Van Gool, "Structured Sparsity Learning for Efficient Video Super-Resolution", *Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [C51] Zixiang Zhao, Haowen Bai, Jianshe Zhang, **Yulun Zhang**, Shuang Xu, Zudi Lin, Radu Timofte, Luc Van Gool, "CDDFuse: Correlation-Driven Dual-Branch Feature Decomposition for Multi-Modality Image Fusion", *Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [C50] Chunming He, Kai Li, Yachao Zhang, Longxiang Tang, **Yulun Zhang**, Zhenhua Guo, Xiu Li, "Camouflaged Object Detection with Feature Decomposition and Edge Reconstruction", *Computer Vision and Pattern Recognition (CVPR)*, 2023.

- [C49] **Yulun Zhang**, Donglai Wei, Richard Schalek, Yuelong Wu, Stephen Turney, Jeff Lichtman, Hanspeter Pfister, and Yun Fu, “High-Throughput Microscopy Image Deblurring with Graph Reasoning Attention Network”, *IEEE International Symposium on Biomedical Imaging (ISBI)*, 2023
- [C48] Jiale Zhang, **Yulun Zhang***, Jinjin Gu, Yongbing Zhang, Linghe Kong*, and Xin Yuan, “Accurate Image Restoration with Attention Retractable Transformer”, *International Conference on Learning Representations (ICLR)*, 2023 (**Spotlight**)
- [C47] Bin Xia, **Yulun Zhang**, Yitong Wang, Yapeng Tian, Wenming Yang, Radu Timofte, and Luc Van Gool, “Basic Binary Convolution Unit for Binarized Image Restoration Network”, *International Conference on Learning Representations (ICLR)*, 2023
- [C46] Bin Xia, **Yulun Zhang**, Yitong Wang, Yapeng Tian, Wenming Yang, Radu Timofte, and Luc Van Gool, “Knowledge Distillation based Degradation Estimation for Blind Super-Resolution”, *International Conference on Learning Representations (ICLR)*, 2023
- [C45] Miaoyu Li, Ying Fu, and **Yulun Zhang**, “Spatial-Spectral Transformer for Hyperspectral Image Denoising”, *The AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
- [C44] Bin Sun, **Yulun Zhang**, Songyao Jiang, and Yun Fu, “Hybrid Pixel-Unshuffled Network for Lightweight Image Super-Resolution”, *The AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
- [C43] Zheng Chen, **Yulun Zhang**, Jinjin Gu, Yongbing Zhang, Linghe Kong, and Xin Yuan, “Cross Aggregation Transformer for Image Restoration”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2022 (**Spotlight**)
- [C42] Yuanhao Cai[†], Jing Lin[†], Haoqian Wang, Xin Yuan, Henghui Ding, **Yulun Zhang**, Radu Timofte, and Luc Van Gool, “Degradation-Aware Unfolding Half-Shuffle Transformer for Spectral Compressive Imaging”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2022
- [C41] Jiamian Wang, **Yulun Zhang**, Xin Yuan, Ziyi Meng, and Zhiqiang Tao, “Modeling Mask Uncertainty in Hyperspectral Image Reconstruction”, *European Conference on Computer Vision (ECCV)*, 2022. (**Oral**, 2.7%)
- [C40] Yuanhao Cai[†], Jing Lin[†], Xiaowan Hu, Haoqian Wang, Xin Yuan, **Yulun Zhang**, Radu Timofte, and Luc Van Gool, “Coarse-to-Fine Sparse Transformer for Hyperspectral Image Reconstruction”, *European Conference on Computer Vision (ECCV)*, 2022.
- [C39] Jiezhong Cao, Jingyun Liang, Kai Zhang, Wenguan Wang, Qin Wang, **Yulun Zhang**, Hao Tang, and Luc Van Gool, “Towards Interpretable Video Super-Resolution via Alternating Optimization”, *European Conference on Computer Vision (ECCV)*, 2022.
- [C38] Jiezhong Cao, Jingyun Liang, Kai Zhang, Yawei Li, **Yulun Zhang***, Wenguan Wang, and Luc Van Gool, “Reference-based Image Super-Resolution with Deformable Attention Transformer”, *European Conference on Computer Vision (ECCV)*, 2022.
- [C37] Jinjin Gu, Haoming Cai, Chenyu Dong, Ruofan Zhang, **Yulun Zhang**, Wenming Yang, and Chun Yuan, “Super-Resolution by Predicting Offsets: An Ultra-Efficient Super-Resolution Network for Rasterized Images”, *European Conference on Computer Vision (ECCV)*, 2022.
- [C36] Xiaotong Luo, Mingliang Dai, **Yulun Zhang**, Yuan Xie, Ding Liu, Yanyun Qu, Yun Fu, and Junping Zhang, “Adjustable Memory-efficient Image Super-resolution via Individual Kernel Sparsity”, *ACM International Conference on Multimedia (ACM MM)*, 2022.

- [C35] Chaowei Fang, Dingwen Zhang, Liang Wang, **Yulun Zhang**, Lechao Cheng, and Junwei Han, “Cross-Modality High-Frequency Transformer for MR Image Super-Resolution”, *ACM International Conference on Multimedia (ACM MM)*, 2022.
- [C34] Jing Lin[†], Xiaowan Hu[†], Yuanhao Cai, Haoqian Wang, Youliang Yan, Xueyi Zou, **Yulun Zhang**, Luc Van Gool, “Unsupervised Flow-Aligned Sequence-to-Sequence Learning for Video Restoration”, *International Conference on Machine Learning (ICML)*, 2022. (21.9%)
- [C33] Jing Lin[†], Yuanhao Cai[†], Xiaowan Hu, Haoqian Wang, Youliang Yan, Xueyi Zou, Henghui Ding, **Yulun Zhang**, Radu Timofte, Luc Van Gool, “Flow-Guided Sparse Transformer for Video Deblurring”, *International Conference on Machine Learning (ICML)*, 2022. (21.9%)
- [C32] Yi Xu, Lichen Wang, Yizhou Wang, Can Qin, **Yulun Zhang**, and Yun Fu, “MemREIN: Rein the Domain Shift for Cross-Domain Few-Shot Learning”, *International Joint Conferences on Artificial Intelligence (IJCAI)*, 2022 (**Short paper, 15%**)
- [C31] Huang Wang, Can Qin, Yue Bai, **Yulun Zhang**, and Yun Fu, “Recent Advances on Neural Network Pruning at Initialization”, *International Joint Conferences on Artificial Intelligence (IJCAI)*, 2022 (**Survey Track, 18%**)
- [C30] Yuanhao Cai, Jing Lin, Xiaowan Hu, Haoqian Wang, Xin Yuan, **Yulun Zhang**, Radu Timofte, Luc Van Gool, “Mask-guided Spectral-wise Transformer for Efficient Hyperspectral Image Reconstruction”, *Computer Vision and Pattern Recognition (CVPR)*, 2022.
- [C29] Xiaowan Hu, Yuanhao Cai, Jing Lin, Haoqian Wang, Xin Yuan, **Yulun Zhang**, Radu Timofte, Luc Van Gool, “HDNet: High-resolution Dual-domain Learning for Spectral Compressive Imaging”, *Computer Vision and Pattern Recognition (CVPR)*, 2022.
- [C28] Salma Abdel Magid, Zudi Lin, Donglai Wei, **Yulun Zhang**, Jinjin Gu, and Hanspeter Pfister, “Texture-based Error Analysis for Image Super-Resolution”, *Computer Vision and Pattern Recognition (CVPR)*, 2022.
- [C27] **Yulun Zhang**[†], Huang Wang^{†,*}, Can Qin, and Yun Fu, “Learning Efficient Image Super-Resolution Networks via Structure-Regularized Pruning”, *International Conference on Learning Representations (ICLR)*, 2022
- [C26] **Yulun Zhang**[†], Huang Wang^{†,*}, Can Qin, and Yun Fu, “Aligned Structured Sparsity Learning for Efficient Image Super-Resolution”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2021 (**Spotlight, 3%**)
- [C25] Yuanhao Cai, Xiaowan Hu, Haoqian Wang*, **Yulun Zhang**, Hanspeter Pfister, and Donglai Wei, “Learning to Generate Realistic Noisy Images via Pixel-level Noise-aware Adversarial Training”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2021
- [C24] Can Qin, Handong Zhao, Lichen Wang, Huan Wang, **Yulun Zhang**, and Yun Fu, “Slow Learning and Fast Inference: Efficient Graph Similarity Computation via Knowledge Distillation”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2021 (Poster, 26%)
- [C23] **Yulun Zhang**, Donglai Wei, Can Qin, Huan Wang*, Hanspeter Pfister, and Yun Fu, “Context Reasoning Attention Network for Image Super-Resolution”, *International Conference on Computer Vision (ICCV)*, 2021
- [C22] Salma Abdel Magid, **Yulun Zhang**, Donglai Wei, Won-Dong Jang, Zudi Lin, Yun Fu, and Hanspeter Pfister, “Dynamic High-Pass Filtering and Multi-Spectral Attention for Image Super-Resolution”, *International Conference on Computer Vision (ICCV)*, 2021

- [C21] Kai Li, Chang Liu, Handong Zhao, **Yulun Zhang**, and Yun Fu, “ECACL: A Holistic Framework for Semi-Supervised Domain Adaptation”, *International Conference on Computer Vision (ICCV)*, 2021.
- [C20] Xiaowan Hu, Yuanhao Cai, Zhihong Liu, Haoqian Wang, and **Yulun Zhang**, “Multi-Scale Selective Feedback Network with Dual Loss for Real Image Denoising”, *International Joint Conferences on Artificial Intelligence (IJCAI)*, 2021. (**Oral, 13.9%**)
- [C19] **Yulun Zhang**, Kai Li, Kunpeng Li, and Yun Fu, “MR Image Super-Resolution with Squeeze and Excitation Reasoning Attention Network”, *Computer Vision and Pattern Recognition (CVPR)*, 2021.
- [C18] Xiaowan Hu, Ruijun Ma, Zhihong Liu, Yuanhao Cai, Xiaole Zhao, **Yulun Zhang**, and Haoqian Wang, “Pseudo 3D Auto-Correlation Network for Real Image Denoising”, *Computer Vision and Pattern Recognition (CVPR)*, 2021.
- [C17] Huan Wang, Can Qin, **Yulun Zhang***, and Yun Fu, “Neural Pruning via Growing Regularization”, *International Conference on Learning Representations (ICLR)*, 2021.
- [C16] Yuchen Fan, Jiahui Yu, Yiqun Mei, **Yulun Zhang**, Yun Fu, Ding Liu, Thomas S Huang, “Neural Sparse Representation for Image Restoration”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.
- [C15] **Yulun Zhang**, Zhifei Zhang, Stephen DiVerdi, Zhaowen Wang, Jose Echevarria, and Yun Fu, “Texture Hallucination for Large-Factor Painting Super-Resolution”, *European Conference on Computer Vision (ECCV)*, 2020.
- [C14] Xiaotong Luo, Yuan Xie, **Yulun Zhang**, Yanyun Qu, Cuihua Li, and Yun Fu, “LatticeNet: Towards Lightweight Image Super-resolution with Lattice Block”, *European Conference on Computer Vision (ECCV)*, 2020.
- [C13] Kai Li, **Yulun Zhang**, Kunpeng Li, and Yun Fu, “Adversarial Feature Hallucination Networks for Few-Shot Learning”, *Computer Vision and Pattern Recognition (CVPR)*, 2020.
- [C12] Yapeng Tian, **Yulun Zhang**, Yun Fu, and Chenliang Xu, “TDAN: Temporally Deformable Alignment Network for Video Super-Resolution”, *Computer Vision and Pattern Recognition (CVPR)*, 2020.
- [C11] 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”, *Computer Vision and Pattern Recognition (CVPR)*, 2020.
- [C10] 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.
- [C9] **Yulun Zhang**, Chen Fang, Yilin Wang, Zhaowen Wang, Zhe Lin, Yun Fu, and Jimei Yang, “Multimodal Style Transfer via Graph Cuts”, *International Conference on Computer Vision (ICCV)*, 2019.
- [C8] Kunpeng Li, **Yulun Zhang**, Kai Li, Yuanyuan Li, and Yun Fu, “Visual Semantic Reasoning for Image-Text Matching”, *International Conference on Computer Vision (ICCV)*, 2019. (**Oral, 4.3%**)
- [C7] Kunpeng Li, **Yulun Zhang**, Kai Li, Yuanyuan Li, and Yun Fu, “Attention Bridging Network for Knowledge Transfer”, *International Conference on Computer Vision (ICCV)*, 2019.

- [C6] 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%**)
- [C5] **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.
- [C4] **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.
- [C3] **Yulun Zhang**, Yapeng Tian, Yu Kong, Bineng Zhong, and Yun Fu, “Residual Dense Network for Image Super-Resolution”, *Computer Vision and Pattern Recognition (CVPR)*, 2018. (**Spotlight, 6.6%**)
- [C2] 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.
- [C1] **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

6 CVPR Workshop, 1 ICCV Workshop

- [W7] **Yulun Zhang**, Kai Zhang, Zheng Chen, Yawei Li, Radu Timofte, and others, “NTIRE 2023 challenge on image super-resolution (x4): Methods and results”, *CVPR New Trends in Image Restoration and Enhancement (NTIRE) workshop and challenge on image super-resolution ($\times 4$) (CVPR Workshop)*, 2023.
- [W6] Yawei Li, **Yulun Zhang**, Radu Timofte, Luc Van Gool, and others, “NTIRE 2023 challenge on efficient super-resolution: Methods and results”, *CVPR New Trends in Image Restoration and Enhancement (NTIRE) workshop and challenge on efficient super-resolution (CVPR Workshop)*, 2023.
- [W6] Yawei Li, **Yulun Zhang**, Radu Timofte, Luc Van Gool, and others, “NTIRE 2023 challenge on image denoising: Methods and results”, *CVPR New Trends in Image Restoration and Enhancement (NTIRE) workshop and challenge on image denoising (CVPR Workshop)*, 2023.
- [W4] Xiaohong Liu, Xiongkuo Min, Wei Sun, **Yulun Zhang**, Kai Zhang, Radu Timofte, Guangtao Zhai, Yixuan Gao, Yuqin Cao, Tengchuan Kou, Yunlong Dong, Ziheng Jia, and others, “NTIRE 2023 Quality Assessment of Video Enhancement Challenge”, *CVPR New Trends in Image Restoration and Enhancement (NTIRE) workshop and challenge on Quality Assessment of Video Enhancement (CVPR Workshop)*, 2023.
- [W3] Yuanhao Cai, Jing Lin, Zudi Lin, Haoqian Wang, **Yulun Zhang**, Hanspeter Pfister, Radu Timofte, and Luc Van Gool, “MST++: Multi-stage Spectral-wise Transformer for Efficient Spectral Reconstruction”, *IEEE CVPR New Trends in Image Restoration and Enhancement (NTIRE) workshop and challenge on Spectral Reconstruction from RGB (CVPR Workshop)*, 2022. (**First Place Award**)
- [W2] 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**)

- [W1] 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 (NTIRE) workshop and challenge on image super-resolution (CVPR Workshop)*, 2017. (**Second Place Award**)

Patent Applications

- [P3] **Yulun Zhang**, Zhifei Zhang, Stephen DiVerdi, Zhaowen Wang, and Jose Echevarria, “Texture Hallucination for Large-Scale Painting Super-Resolution”, Filed by Adobe Systems Incorporated, 2020
- [P2] Chen Fang, Zhe Lin, Zhaowen Wang, **Yulun Zhang**, Yilin Wang, and Jimei Yang, “Transferring Image Style to Content of a Digital Image”, Filed by Adobe Systems Incorporated, 2019
- [P1] Chen Fang, Zhe Lin, Zhaowen Wang, **Yulun Zhang**, Yilin Wang, and Jimei Yang, “Hierarchical Scale Matching and Patch Estimation for Image Style Transfer with Arbitrary Resolution”, Filed by Adobe Systems Incorporated, 2019

ACADEMIC SERVICE

Area Chair

- Computer Vision and Pattern Recognition (CVPR), 2023-2024
- International Conference on Computer Vision (ICCV), 2023
- Advances in Neural Information Processing Systems (NeurIPS), 2023
- International Conference on Learning Representations (ICLR), 2024
- ACM International Conference on Multimedia (ACM MM), 2024

Senior Program Committee

- International Joint Conferences on Artificial Intelligence (IJCAI), 2021-2023
- AAAI Conference on Artificial Intelligence (AAAI), 2023-2024

Workshop Co-Organizer

- New Trends in Image Restoration and Enhancement workshop (NTIRE), CVPR 2022-2023

Program Committee or Reviewer

- Computer Vision and Pattern Recognition (CVPR), 2019-2022
- International Conference on Computer Vision (ICCV), 2019/2021
- European Conference on Computer Vision (ECCV), 2020-2022
- International Conference on Learning Representations (ICLR), 2020-2023
- Advances in Neural Information Processing Systems (NeurIPS), 2020-2022
- International Conference on Machine Learning (ICML), 2021-2023
- AAAI Conference on Artificial Intelligence (AAAI), 2019-2022
- International Joint Conferences on Artificial Intelligence (IJCAI), 2020
- ACM International Conference on Multimedia (ACM MM), 2021-2023
- International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2020-2023

Associate Editor

- Multimedia Tools and Applications (MTAP), 2023-

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- International Journal of Computer Vision (IJCV)
- 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 Cybernetics (TCYB)
- IEEE Transactions on Geoscience and Remote Sensing (TGRS)
- IEEE Transactions on Computational Imaging (TCI)

- IEEE Transactions on Medical Imaging (TMI)
- IEEE Transactions on Broadcasting
- IEEE Transactions on Cognitive and Developmental Systems (TCDS)
- IEEE Transactions on Intelligent Transportation Systems (TITS)
- ACM Transactions on Intelligent Systems and Technology (TIST)
- Pattern Recognition (PR)
- Information Fusion (INFFUS)
- Computer Vision and Image Understanding (CVIU)
- Neurocomputing (NEUCOM)

MENTORING EXPERIENCE

Ph.D. Students

- Jiezhong Cao, EE@ETH Zürich, Switzerland Oct. 2021 - Now
Topics: image and video restoration
First-author papers: 2 ECCV'22 [C38, C39], CVPR'23 [C55]
Research co-advised with Prof. [Luc Van Gool](#)
- Jiamian Wang, CS@Rochester Institute of Technology, USA Jun. 2021 - Now
Topics: hyperspectral image reconstruction
First-author papers: ECCV'22 [C41], ICCV'23 [C65]
Research co-advised with Prof. [Zhiqiang Tao](#)
- Salma Abdel Magid, CS@Harvard University, USA Apr. 2020 - Now
Topics: interpretability, adversarial robustness, and image super-resolution
First-author papers: ICCV'21 [C22], CVPR'22 [C28]
Research co-advised with Prof. [Hanspeter Pfister](#)
- Xiaowan Hu, AI@Tsinghua University, China Apr. 2019 - Now
Topics: biomedical image analyses, and image denoising
First-author papers: TCSVT'21 [J10], IJCAI'21 [C20], CVPR'21 [C18], CVPR'22 [C29]
Research co-advised with Prof. [Haoqian Wang](#)

Master Students

- Zichun Wang, CS@Beijing Institute of Technology, China Dec. 2021 - Now
Topics: image denoising
First-author papers: CVPR'23 [C54], ACM MM'23 [C68]
Research co-advised with Prof. [Ying Fu](#)
- Miaoyu Li, CS@Beijing Institute of Technology, China Dec. 2021 - Now
Topics: hyperspectral image reconstruction
First-author papers: AAAI'23 [C44], CVPR'23 [C53], ICCV'23 [C61]
Research co-advised with Prof. [Ying Fu](#)
- Jiale Zhang, CS@Shanghai Jiao Tong University, China Feb. 2022 - Now
Topics: image restoration
First-author papers: ICLR'22 [C48]
Research co-advised with Prof. [Linghe Kong](#)
- Zheng Chen, CS@Shanghai Jiao Tong University, China Dec. 2021 - Now
Topics: image restoration
First-author papers: NeurIPS'22 [C43], ICCV'23 [C66], NeurIPS'23 [C72]
Research co-advised with Prof. [Linghe Kong](#)
- Yuanhao Cai, AI@Tsinghua University, China Sept. 2020 - Now
Topics: denoising, image generation, video deblurring, and hyperspectral image reconstruction
First-author papers: NeurIPS'21 [C25], CVPR'22 [C30], ECCV'22 [C40], NeurIPS'22 [C42], ICCV'23 [C63], NeurIPS'23 [C71]
Research co-advised with Prof. [Haoqian Wang](#)
- Jing Lin, AI@Tsinghua University, China Sept. 2020 - Now
Topics: video restoration and hyperspectral image reconstruction
First-author papers: 2 ICML'22 [C33, C34]
Research co-advised with Prof. [Haoqian Wang](#)

- INVITED TALKS
- “Enhance deep CNN features for image restoration and synthesis”,
Harvard University, Apr 2021
ETH Zürich, Jul 2021
Xidian University, Oct 2021
Max Planck Institute for Informatics, May 2022
 - “Learning for image restoration and synthesis”,
Tsinghua University, Sep 2020, Jun 2021
Xidian University, Jul 2020
Rochester Institute of Technology, May 2020
 - “Residual dense network for image super-resolution”,
IEEE CVPR, Salt Lake City, Utah, Jun 2018
 - “Adaptive local nonparametric regression for fast single image super-resolution”,
IEEE International Conference on Visual Communications and Image Processing, Singapore,
Dec 2015
 - “Single image super-resolution via iterative collaborative representation”,
Pacific-Rim Conference on Multimedia, Gwangju, Korea, Sep 2015
 - “Single depth image super resolution via a dual sparsity model”,
IEEE International Conference on Multimedia and Expo, Torino, Italy, Jun 2015
- SKILLS
- Programming: Python, C/C++, Matlab, Lua, L^AT_EX, Visual Studio, OpenCV, Linux.
 - Deep learning tools: PyTorch, TensorFlow, Caffe, Torch, Keras, MatConvNet.