

Yongming Rao

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Education

Department of Automation, Tsinghua University PhD student in Computer Vision Advisor: Prof. Jiwen Lu	Beijing, China 2018-present
Department of Electronic Engineering, Tsinghua University B.E. in Electronic Engineering	Beijing, China 2014-2018
PBC School of Finance, Tsinghua University Minor in Finance	Beijing, China 2015-2018

Publications

* indicates equal contribution

Peer-Reviewed Conference Publications

- [1] **Yongming Rao**, Wenliang Zhao, Zheng Zhu, Jiwen Lu, Jie Zhou
Global Filter Networks for Image Classification
Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS), 2021
- [2] **Yongming Rao**, Wenliang Zhao, Benlin Liu, Jiwen Lu, and Jie Zhou, Cho-Jui Hsieh
DynamicViT: Efficient Vision Transformers with Dynamic Token Sparsification
Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS), 2021
- [3] Xumin Yu*, **Yongming Rao***, Ziyi Wang, Zuyan Liu, Jiwen Lu, Jie Zhou
PoinTr: Diverse Point Cloud Completion with Geometry-Aware Transformers
IEEE International Conference on Computer Vision (ICCV), 2021, **Oral Presentation**
- [4] Yi Wei, Shaohui Liu, **Yongming Rao**, Wang Zhao, Jiwen Lu, Jie Zhou
NerfingMVS: Guided Optimization of Neural Radiance Fields for Indoor Multi-view Stereo
IEEE International Conference on Computer Vision (ICCV), 2021, **Oral Presentation**
- [5] **Yongming Rao***, Benlin Liu*, Yi Wei, Jiwen Lu, Cho-Jui Hsieh, Jie Zhou
RandomRooms: Unsupervised Pre-training from Synthetic Shapes and Randomized Layouts for 3D Object Detection
IEEE International Conference on Computer Vision (ICCV), 2021
- [6] **Yongming Rao***, Guangyi Chen*, Jiwen Lu, Jie Zhou
Counterfactual Attention Learning for Fine-Grained Visual Categorization and Re-identification
IEEE International Conference on Computer Vision (ICCV), 2021
- [7] Wenliang Zhao*, **Yongming Rao***, Ziyi Wang, Jiwen Lu, Jie Zhou
Towards Interpretable Deep Metric Learning with Structural Matching
IEEE International Conference on Computer Vision (ICCV), 2021
- [8] Xumin Yu*, **Yongming Rao***, Wenliang Zhao, Jiwen Lu, Jie Zhou
Group-aware Contrastive Regression for Action Quality Assessment
IEEE International Conference on Computer Vision (ICCV), 2021
- [9] Yi Wei*, Ziyi Wang*, **Yongming Rao***, Jiwen Lu, Jie Zhou
PV-RAFT: Point-Voxel Correlation Fields for Scene Flow Estimation of Point Clouds
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2021
- [10] Benlin Liu*, **Yongming Rao***, Jiwen Lu, Jie Zhou, Cho-Jui Hsieh
Multi-Proxy Wasserstein Classifier for Image Classification
35th AAAI Conference on Artificial Intelligence (AAAI), 2021
- [11] Guangyi Chen*, **Yongming Rao***, Jiwen Lu, and Jie Zhou
Temporal Coherence or Temporal Motion: Which is More Critical for Video-based Person Re-identification?
16th European Conference on Computer Vision (ECCV), 2020

- [12] Benlin Liu, **Yongming Rao**, Jiwen Lu, and Jie Zhou, Cho-Jui Hsieh
MetaDistiller: Network Self-Boosting via Meta-Learned Top-Down Distillation
16th European Conference on Computer Vision (ECCV), 2020
- [13] **Yongming Rao**, Jiwen Lu, and Jie Zhou
Global-Local Bidirectional Reasoning for Unsupervised Representation Learning of 3D Point Clouds
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2020
- [14] Cheng Ma, **Yongming Rao**, Yean Cheng, Ce Chen, Jiwen Lu, and Jie Zhou
Structure-Preserving Super Resolution with Gradient Guidance
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2020
- [15] Cheng Ma, Zhengyu Jiang, **Yongming Rao**, Jiwen Lu, and Jie Zhou
Deep Face Super-Resolution with Iterative Collaboration between Attentive Recovery and Landmark Estimation
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2020
- [16] **Yongming Rao**, Jiwen Lu, and Jie Zhou
Spherical Fractal Convolution Neural Networks for Point Cloud Recognition
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2019
- [17] Yansong Tang, Dajun Ding, **Yongming Rao**, Yu Zheng, Danyang Zhang, Lili Zhao, Jiwen Lu, and Jie Zhou
COIN: A Large-scale Dataset for Comprehensive Instruction Video Analysis
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2019
- [18] **Yongming Rao**, Dahua Lin, Jiwen Lu, and Jie Zhou
Learning Globally Optimized Object Detector via Policy Gradient
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2018, **Spotlight Presentation**
- [19] Ji Lin*, **Yongming Rao***, Jiwen Lu, and Jie Zhou
Runtime Neural Pruning
The Thirty-first Annual Conference on Neural Information Processing Systems (NeurIPS), 2017
- [20] **Yongming Rao**, Ji Lin, Jiwen Lu, and Jie Zhou
Learning Discriminative Aggregation Network for Video-Based Face Recognition
IEEE International Conference on Computer Vision (ICCV), 2017, **Spotlight Presentation**
- [21] **Yongming Rao**, Jiwen Lu, and Jie Zhou
Attention-aware Deep Reinforcement Learning for Video Face Recognition
IEEE International Conference on Computer Vision (ICCV), 2017
- [22] Bilong Shen, Ying Zhao, Guoliang Li, Weimin Zheng, Yue Qin, Bo Yuan, and **Yongming Rao**
V-tree: Efficient KNN Search on Moving Objects with Road-Network Constraints
IEEE 33rd International Conference on Data Engineering (ICDE), 2017

Peer-Reviewed Journal Publications

- [23] Cheng Ma, **Yongming Rao**, Jiwen Lu, and Jie Zhou
Structure-Preserving Image Super-Resolution
IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI, IF: 17.861), 2021
- [24] **Yongming Rao**, Jiwen Lu, and Jie Zhou
Learning Discriminative Aggregation Network for Video-based Face Recognition and Person Re-identification
International Journal of Computer Vision (IJCV, IF: 5.698), 2019
- [25] **Yongming Rao**, Jiwen Lu, Ji Lin, and Jie Zhou
Runtime Network Routing for Efficient Image Classification
IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI, IF: 17.861), 2019

Talks

- **Deep Reinforcement Learning for Computer Vision**
CVPR'2019 Tutorial on Deep Reinforcement Learning for Computer Vision June 2019
- **Spherical Fractal Convolution Neural Networks for Point Cloud Recognition**
Invited Presentation at 2019 Beijing University Academic Forum on Artificial Intelligence March 2019
- **Learning Globally Optimized Object Detector via Policy Gradient**
CVPR'2018 Spotlight Presentation June 2018
- **Runtime Neural Pruning**
Invited Presentation at the 15th China Workshop on Machine Learning and Applications (MLA'2017) Nov 2017

Honors and Awards

- **Baidu Top 100 Chinese Rising Stars in AI** 2021
- CVPR 2021 Outstanding Reviewer 2021
- ECCV 2020 Outstanding Reviewer 2020
- 2nd place in Semi-Supervised Recognition Challenge at FGVC7 2020
- **2019 CCF-CV Academic Emerging Award** 2019
- **Chinese National Scholarship** 2019
- ICME 2019 Best Reviewers Award 2019
- NeurIPS 2019 Top 50% High-Scoring Reviewer 2019
- 1st prize in Beijing University Academic Forum on Artificial Intelligence 2019
- 1st place in Momenta Lane Detection Challenge 2018
- 2017 Sensetime Undergraduate Scholarship 2017
- 1st place in 17th Electronic Design Contest of Tsinghua University 2016
- Huawei Innovation Prize in 2016 Tsinghua Challenge Cup 2016
- EMC Innovation Prize in 2016 Tsinghua Challenge Cup 2016

Academic Services

Co-Organizer

- Tutorial on Deep Reinforcement Learning for Computer Vision at CVPR 2019.

Conference Senior PC Member

- International Joint Conference on Artificial Intelligence (IJCAI 2021)

Conference Reviewer / PC Member

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2018, 2019, 2020, 2021, 2022)
- International Conference on Machine Learning (ICML 2019, 2020, 2021)
- International Conference on Computer Vision (ICCV 2019, 2021)
- Conference on Neural Information Processing Systems (NeurIPS 2019, 2020, 2021)
- International Conference on Learning Representations (ICLR 2021, 2022)
- European Conference on Computer Vision (ECCV 2020)
- AAAI Conference on Artificial Intelligence (AAAI 2020, 2021)
- IEEE International Conference on Multimedia and Expo (ICME 2019, 2020, 2021)
- IEEE Winter Conference on Applications of Computer Vision (WACV 2020, 2021, 2022)
- Asian Conference on Computer Vision (ACCV 2018, 2020)
- International Conference on Pattern Recognition (ICPR 2018, 2020)
- IEEE International Conference on Image Processing (ICIP 2018, 2019)

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- International Journal of Computer Vision
- IEEE Transactions on Image Processing
- IEEE Transactions on Multimedia
- IEEE Transactions on Cybernetics
- Pattern Recognition