

# Yongming Rao

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## Education

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

## Publications

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\* indicates equal contribution

### Peer-Reviewed Conference Publications

- [1] 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
- [2] 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
- [3] 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
- [4] 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
- [5] **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
- [6] 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
- [7] 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
- [8] **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
- [9] 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
- [10] **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**
- [11] Ji Lin\*, **Yongming Rao\***, Jiwen Lu, and Jie Zhou  
**Runtime Neural Pruning**  
The Thirty-first Annual Conference on Neural Information Processing Systems (NeurIPS), 2017

- [12] **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**
- [13] **Yongming Rao**, Jiwen Lu, and Jie Zhou  
**Attention-aware Deep Reinforcement Learning for Video Face Recognition**  
IEEE International Conference on Computer Vision (ICCV), 2017
- [14] 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

- [15] **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
- [16] **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

### ArXiv Preprints

- [17] **Yongming Rao**, Wenliang Zhao, Benlin Liu, Jiwen Lu, and Jie Zhou, Cho-Jui Hsieh  
**DynamicViT: Efficient Vision Transformers with Dynamic Token Sparsification**  
arXiv:2106.02034, 2021
- [18] Peiyu Yu, **Yongming Rao**, Jiwen Lu, and Jie Zhou  
**P<sup>2</sup>GNet: Pose-Guided Point Cloud Generating Networks for 6-DoF Object Pose Estimation**  
arXiv:1912.09316, 2019

### Talks

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- **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
- **Learning Discriminative Aggregation Network for Video-Based Face Recognition**  
*ICCV'2017 Spotlight Presentation* Oct 2017

### Honors and Awards

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- Baidu Chinese AI New Star Top-100 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

## Academic Services

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### Co-Organizer

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

### Conference Senior PC Member

- o International Joint Conference on Artificial Intelligence (IJCAI 2021)

### Conference Reviewer / PC Member

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

### Journal Reviewer

- o International Journal of Computer Vision
- o IEEE Transactions on Image Processing
- o IEEE Transactions on Multimedia
- o IEEE Transactions on Cybernetics
- o Pattern Recognition