

# Dongliang Chang

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## WORK EXPERIENCE

### Tsinghua University, Beijing, China

- Postdoc, Department of Automation
  - Adviser: Prof. Jiwen Lu
  - Focus: Fine-Grained Visual Understanding

Jun 2023 –

## EDUCATION

### Beijing University of Posts and Telecommunications (BUPT), Beijing, China

- Ph.D. in Information and Communication Engineering
  - Adviser: Prof. Zhanyu Ma and Prof. Yi-Zhe Song
  - Focus: Fine-Grained Visual Classification

Sep 2019 – Jun 2023

- Visiting Student
  - Adviser: Prof. Zhanyu Ma

Apr 2017 – Sep 2019

### University of Surrey, London, United Kingdom

- Visiting Ph.D Student
  - Adviser: Prof. Yi-Zhe Song

Feb 2022 – Mar 2023

### Lanzhou University of Technology (LUT), Lanzhou, China

- M.E. in IOT Engineering
  - Adviser: Prof. Xiaoxu Li

Sep 2016 – Jun 2019

### Zhoukou Normal University (ZKNU), Zhoukou, China

- B.E. in Network Engineering
  - Adviser: Qi Wang

Sep 2012 – Jun 2016

## PUBLICATIONS

### HIGHLIGHTS (\* DENOTES THE CORRESPONDING AUTHOR.)

- [5] Ruoyi Du, Dongliang Chang\*, Timothy Hospedales, Yi-Zhe Song, and Zhanyu Ma, “DemoFusion: Democratising High-Resolution Image Generation With No \$\$\$,” in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [4] Dongliang Chang, Kaiyue Pang, Ruoyi Du, Yujun Tong, Yi-Zhe Song, Zhanyu Ma\*, and Jun Guo, “Making a Bird AI Expert Work for You and Me,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2023.
- [3] Dongliang Chang, Yujun Tong, Ruoyi Du, Timothy Hospedales, Yi-Zhe Song, and Zhanyu Ma\*, “An Erudite Fine-Grained Visual Classification Model,” in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [2] Dongliang Chang, Kaiyu Pang, Yixiao Zheng, Zhanyu Ma\*, Yi-Zhe Song, Jun Guo, “Your “Flamingo” is My “Bird”: Fine-Grained, or Not,” in *Computer Vision and Pattern Recognition (CVPR), Oral (4.1%)*, 2021.
- [1] Dongliang Chang, Yifeng Ding, Jiyang Xie, Ayan Kumar Bhunia, Xiaoxu Li, Zhanyu Ma\*, Ming Wu, Jun Guo, and Yi-Zhe Song, “The Devil is in the Channels: Mutual-Channel Loss for Fine-Grained Image Classification,” *IEEE Transactions on Image Processing*, vol. 29, pp. 19572–19578, 2020. (ESI Highly Cited Papers)

### INTERNATIONAL JOURNAL (\* DENOTES THE CORRESPONDING AUTHOR.)

- [15] Jijie Wu, Dongliang Chang, Xiaoxu Li\*, Zhanyu Ma, Jie Cao, Jun Guo, and Yi-Zhe Song, “Bi-Directional Ensemble Feature Reconstruction Network for Few-Shot Fine-Grained Classification,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2024.
- [14] Yixiao Zheng, Kaiyue Pang, Ayan Das, Dongliang Chang, Yi-Zhe Song, and Zhanyu Ma\*, “CreativeSeg: Semantic Segmentation of Creative Sketches,” *IEEE Transactions on Image Processing*, 2024.
- [13] Dongliang Chang, Aneeshan Sain, Zhanyu Ma\*, Yi-Zhe Song, Ruiping Wang, and Jun Guo, “Mind the Gap: Open Set Domain Adaptation via Mutual-to-Separate Framework,” *IEEE Transactions on Circuits and Systems for Video Technology*, Jun 2024.

- [12] Ruoyi Du, Dongliang Chang, Zhanyu Ma, Kongming Liang\*, Yi-Zhe Song, and Jun Guo, “Semi-Supervised Learning for FGVC with Out-of-Category Data,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2023.
- [11] Dongliang Chang, Kaiyue Pang, Ruoyi Du, Yujun Tong, Yi-Zhe Song, Zhanyu Ma\*, and Jun Guo, “Making a Bird AI Expert Work for You and Me,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2023.
- [10] Ruoyi Du, Jiyang Xie, Zhanyu Ma\*, Dongliang Chang, Yi-Zhe Song, and Jun Guo, “Progressive Learning of Category-Consistent Multi-Granularity Features for Fine-Grained Visual Classification,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2021.
- [9] Jiyang Xie, Zhanyu Ma\*, Dongliang Chang, Guoqiang Zhang, and Jun Guo, “GPCA: A Probabilistic Framework for Gaussian Process Embedded Channel Attention,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2021. (ESI Highly Cited Papers)
- [8] Yifeng Ding, Zhanyu Ma\*, Shaoguo Wen, Jiyang Xie, Dongliang Chang, Zhongwei Si, Ming Wu, and Haibin Ling, “AP-CNN: Weakly Supervised Attention Pyramid Convolutional Neural Network for Fine-Grained Visual Classification,” *IEEE Transactions on Image Processing*, 2021.
- [7] Xiaoxu Li, Dongliang Chang, Zhanyu Ma\*, Zheng-Hua Tan, Jing-Hao Xue, Jie Cao, and Jun Guo, “Deep InterBoost Networks for Small-sample Image Classification,” *NEUROCOMPUTING*, 2020.
- [6] Xiaoxu Li, Dongliang Chang, Zhanyu Ma\*, Zheng-Hua Tan, Jing-Hao Xue, Jie Cao, Jingyi Yu, Jun Guo, “OSLNet: Deep Small-Sample Classification with an Orthogonal Softmax Layer,” *IEEE Transactions on Image Processing*, vol. 29, pp. 6482–6495, 2020.
- [5] Dongliang Chang, Yifeng Ding, Jiyang Xie, Ayan Kumar Bhunia, Xiaoxu Li, Zhanyu Ma\*, Ming Wu, Jun Guo, and Yi-Zhe Song, “The Devil is in the Channels: Mutual-Channel Loss for Fine-Grained Image Classification,” *IEEE Transactions on Image Processing*, vol. 29, pp. 19572–19578, 2020. (ESI Highly Cited Papers)
- [4] Xiaoxu Li\*, Dongliang Chang, Tao Tian, and Jie Cao, “Large-margin Regularized Softmax Cross-Entropy Loss,” *IEEE Access*, vol. 12, pp. 330–352, 2019.
- [3] Zhanyu Ma\*, Dongliang Chang, Jiyang Xie, Yifeng Ding, Shaoguo Wen, Xiao-Xu Li, Zhongwei Si, and Jun Guo, “Fine-Grained Vehicle Classification with Channel Max Pooling Modified CNNs,” *IEEE Transactions on Vehicular Technology*, vol. 68, pp. 3224–3233, Apr 2019. (ESI Highly Cited Papers)
- [2] Xiaoxu Li\*, Liyun Yu, Dongliang Chang, Zhanyu Ma\*, and Jie Cao, “Dual Cross-Entropy Loss for Small-Sample Fine-Grained Vehicle Classification,” *IEEE Transactions on Vehicular Technology*, vol. 68, pp. 4204–4212, May 2019.
- [1] Luyao Liu, Yi Zhao, Dongliang Chang, Jiyang Xie, Zhanyu Ma\*, Qie Sun\*, Hongyi Yin\*, and Ronald Wennersten, “Prediction of short-term PV power output and uncertainty analysis,” *Applied Energy*, vol. 228, pp. 700–711, Oct 2018.

**INTERNATIONAL CONFERENCE (\* DENOTES THE CORRESPONDING AUTHOR.)**

- [30] Xinyu Bian, Dongliang Chang\*, Yuqi Yang, Zhongjiang He, Kongming Liang, and Zhanyu Ma, “Class-Aware Contrastive Learning for Fine-Grained Skeleton-Based Action Recognition,” in *Asian Conference on Computer Vision (ACCV)*, 2024.
- [29] Wenxin Ning, Dongliang Chang\*, Yujun Tong, Zhongjiang He, Kongming Liang, and Zhanyu Ma, “Hierarchical Prompting for Diffusion Classifiers,” in *Asian Conference on Computer Vision (ACCV)*, 2024.
- [28] Shicheng Yang, Xiaoxu Li\*, Dongliang Chang\*, Zhanyu Ma, and Jing-Hao Xue, “Channel-Spatial Support-Query Cross-Attention for Fine-Grained Few-Shot Image Classification,” in *ACM International Conference on Multimedia (ACM MM)*, 2024.
- [27] Ruoyi Du, Dongliang Chang\*, Timothy Hospedales, Yi-Zhe Song, and Zhanyu Ma, “DemoFusion: Democratising High-Resolution Image Generation With No \$\$\$,” in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- [26] Meijiang Fu, Yixiao Zheng, Dongliang Chang\*, Wenpan Li, and Zhanyu Ma, “Multi-Frequency Feature Enhancement for Multi-Granularity Visual Classification,” in *the Annual Conference Organized by Asia-Pacific Signal and Information Processing Association (APSIPA)*, 2023.
- [25] Ruoyi Du, Wenqing Yu, Heqing Wang, Ting-En Lin, Dongliang Chang\*, and Zhanyu Ma, “Multi-view Active Fine-grained Visual Recognition,” in *International Conference on Computer Vision (ICCV)*, 2023.

- [24] Wenqing Yu, Dongliang Chang\*, Kongming Liang, and Zhanyu Ma, “Bilinear Adversarial Network for Fine-grained Domain Adaptation,” in *IEEE International Conference on Network Intelligence and Digital Content (IC-NIDC)*, 2023.
- [23] Dongliang Chang, Yujun Tong, Ruoyi Du, Timothy Hospedales, Yi-Zhe Song, and Zhanyu Ma\*, “An Erudite Fine-Grained Visual Classification Model,” in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [22] Ruoyi Du, Dongliang Chang, Kongming Liang\*, Timothy Hospedales, Yi-Zhe Song, and Zhanyu Ma, “On-the-fly Category Discovery,” in *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.
- [21] Jijie Wu, Dongliang Chang, Aneeshan Sain, Xiaoxu Li\*, Zhanyu Ma, Jie Cao, Jun Guo, and Yi-Zhe Song, “Bi-Directional Feature Reconstruction Network for Fine-grained Few-shot Image Classification,” in *Association for the Advancement of Artificial Intelligence (AAAI)*, Oral, 2022.
- [20] Yitao Chen, Shibo Nie, Mandan Guan, Jie Wang, Ruoyi Du, Dongliang Chang, Kongming Liang, and Zhanyu Ma, “Multi-modal Human-machine Conversation System for Real Physical World,” in *International Workshop on Multimedia Signal Processing (MMSP, Demo Paper)*, 2022.
- [19] Dongliang Chang, Junhan Chen, Xinran Wang, Ruoyi Du, Wenqing Yu, Yufan Liu, Yujun Tong, Kongming Liang, Yi-Zhe Song, and Zhanyu Ma\*, “Complex Scenario-Oriented Fine-Grained Visual Classification Platform,” in *International Workshop on Multimedia Signal Processing (MMSP, Demo Paper)*, 2022.
- [18] Junhan Chen, Dongliang Chang, Ruoyi Du, Jiyang Xie, and Zhanyu Ma\*, “Cross-Layer Feature based Multi-Granularity Visual Classification,” in *IEEE International Conference on Visual Communications and Image Processing (VCIP)*, 2022.
- [17] Jingye Wang, Ruoyi Du, Dongliang Chang, Kongming Liang\*, and Zhanyu Ma, “Domain Generalization via Frequency-domain-based Feature Disentanglement and Interaction,” in *ACM International Conference on Multimedia (ACM MM)*, 2022.
- [16] Tian Zhang, Dongliang Chang, Zhanyu Ma\*, Jun Guo, “Progressive co-attention network for fine-grained visual classification,” in *IEEE Visual Communications and Image Processing (VCIP)*, 2021.
- [15] Shuai Xu, Dongliang Chang, Jiyang Xie, Zhanyu Ma\*, “Grad-CAM Guided Channel-spatial Attention Module for Fine-grained Visual Classification,” in *IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*, 2021.
- [14] Haoyu Wang, Dongliang Chang, Weidong Liu, Bo Xiao, Zhanyu Ma\*, Jun Guo, Yaning Chang, “Exploring Category-shared and Category-specific Features for Fine-Grained Image Classification,” in *the 4th Chinese Conference on Pattern Recognition and Computer Vision (PRCV)*, 2021.
- [13] Siqing Zhang, Ruoyi Du, Dongliang Chang, Zhanyu Ma\*, Jun Guo, “Knowledge Transfer Based Fine-grained Visual Classification,” in *International Conference on Multimedia and Expo (ICME)*, 2021.
- [12] Dongliang Chang, Kaiyu Pang, Yixiao Zheng, Zhanyu Ma\*, Yi-Zhe Song, Jun Guo, “Your “Flamingo” is My “Bird”: Fine-Grained, or Not,” in *Computer Vision and Pattern Recognition (CVPR)*, Oral, 2021.
- [11] Zeyu Song, Dongliang Chang, Zhanyu Ma\*, Xiaoxu Li, and Zheng-Hua Tan, “CC-Loss: Channel Correlation Loss for Image Classification,” in *International Conference on Pattern Recognition (ICPR)*, 2020.
- [10] Junhui Yin, Siqing Zhang, Dongliang Chang, Zhanyu Ma\*, and Jun Guo, “Dual-attention Guided Dropblock Module for Weakly Supervised Object Localization,” in *International Conference on Pattern Recognition (ICPR)*, 2020.
- [9] Ruoyi Du, Dongliang Chang, Ayan Kumar Bhunia, Jiyang Xie, Yi-Zhe Song, Zhanyu Ma\*, Jun Guo, “Fine-Grained Visual Classification via Progressive Multi-Granularity Training of Jigsaw Patches,” in *European Conference on Computer Vision (ECCV)*, 2020.
- [8] Yixiao Zheng, Dongliang Chang, Jiyang Xie, and Zhanyu Ma\*, “IU-Module: Intersection and Union Module for Fine-Grained Visual Classification,” in *IEEE International Conference on Multimedia and Expo (ICME)*, 2020.
- [7] Xinran Wei, Dongliang Chang, Jiyang Xie, Yixiao Zheng, Chen Gong, Chuang Zhang, and Zhanyu Ma, “FICAL: Focal Inter-Class Angular Loss for Image Classification,” in *IEEE International Conference on Visual Communications and Image Processing (VCIP)*, 2019.

- [6] Lu Cheng, Dongliang Chang\*, Jiyang Xie, Rongliang Ma, Chunsheng Wu, and Zhanyu Ma, “Channel Max Pooling for Image Classification,” in *International Conference on Intelligence Science and Big Data Engineering (IScIDE)*, 2019.
- [5] Jie Cao, Yinping Qiu, Dongliang Chang, Xiaoxu Li\*, and Zhanyu Ma\*, “Dynamic Attention Loss for Small-sample Image Classification,” in *The 11th Annual Conference Organized by Asia-Pacific Signal and Information Processing Association (APSIPA)*, 2019.
- [4] Xiaoxu Li, Jijie Wu, Dongliang Chang, Zhanyu Ma\*, and Jie Cao\*, “Mixed Attention Mechanism for Small-Sample Fine-grained Image Classification,” in *The 11th Annual Conference Organized by Asia-Pacific Signal and Information Processing Association (APSIPA)*, 2019.
- [3] Xiaoxu Li, Liyun Yu, Dongliang Chang, Zhanyu Ma\*, and Jie Cao\*, “Small-Sample Image Classification Method of Combining Prototype and Margin Learning,” in *The 11th Annual Conference Organized by Asia-Pacific Signal and Information Processing Association (APSIPA)*, 2019.
- [2] Dongliang Chang, Xiaoxu Li\*, Jiyang Xie, Zhanyu Ma, Jun Guo, and Jie Cao, “SSE: A new selective initialization strategy for Snapshot Ensembling,” in *IEEE International Conference on Cloud Computing and Intelligence Systems (CCIS)*, 2018.
- [1] Jie Cao\*, Zhe Su, Liyun Yu, Dongliang Chang, Xiaoxu Li, and Zhanyu Ma, “Softmax Cross Entropy Loss with Unbiased Decision Boundary for Image Classification,” in *Chinese Automation Congress (CAC)*, 2018.

## RESEARCH PROJECTS

- [3] (Principal Investigator) The National Natural Science Foundation of China, *Certificate Number: 62406171*, 2025-2027. (1,000 postdocs annually)
- [2] (Principal Investigator) The Postdoctoral Fellowship Program of CPSF (B-level), *Certificate Number: GZB20240359*, 2024-2025. (1,000 postdocs annually)
- [1] (Principal Investigator) The China Postdoctoral Science Foundation (General Program), *Certificate Number: 2023M741961*, 2024-2025. (Sponsorship Rate:  $4332 / 27245 = 15.9\%$ )

## AWARDS & SCHOLARSHIPS

- |   |      |
|---|------|
| ▪ Excellent Doctoral Dissertation Award from BSIG (5 students annually)                       | 2024 |
| ▪ Outstanding Graduate of Beijing Municipal Ordinary Institutions of Higher Education (Ph.D.) | 2023 |
| ▪ Outstanding Graduate of BUPT (Ph.D.)  | 2023 |
| ▪ BUPT Ph.D. Students National Scholarship  | 2022 |
| ▪ BUPT Excellent Ph.D. Students Reserve Scholarship (Rate = $32/342 = 9\%$ )                  | 2019 |
| ▪ BUPT Excellent Ph.D. Students Foundation (Rate = $21/342 = 6\%$ )                           | 2020 |
| ▪ China Scholarship Council Scholarship   | 2020 |
| ▪ Excellent PhD Student of the Beijing Association of Automation                              | 2020 |

## SERVICES

### JOURNAL REVIEWERS

- |  |       |
|--|-------|
| ▪ IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) | 2023- |
| ▪ International Journal of Computer Vision (IJCV)                        | 2023- |
| ▪ IEEE Transactions on Image Processing (TIP)                            | 2020- |
| ▪ IEEE Transactions on Neural Networks and Learning Systems (TNNLS)      | 2020- |
| ▪ IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) | 2020- |
| ▪ IEEE Transactions on Multimedia (TMM)                                  | 2020- |
| ▪ IEEE Transactions on Geoscience and Remote Sensing (TGRS)              | 2023- |
| ▪ IEEE Transactions on Vehicular Technology (TVT)                        | 2019- |
| ▪ IEEE Transactions on Artificial Intelligence (TAI)                     | 2024- |
| ▪ Knowledge-Based Systems (KBS)  | 2023- |
| ▪ Information Fusion   | 2024- |
| ▪ Pattern Recognition (PR)   | 2023- |
| ▪ NEUROCOMPUTING   | 2020- |

### CONFERENCE PROGRAM COMMITTEE MEMBERS/REVIEWERS

- |          |       |
|----------|-------|
| ▪ CVPR   | 2021- |
| ▪ ICCV   | 2021- |
| ▪ ECCV   | 2022- |
| ▪ AAAI   | 2020- |
| ▪ ACM MM | 2023- |

- WACV
- ACCV

2023-  
2024-

[CV compiled on 2024-09-23]