

# Zhedong Zheng<sup>id</sup>

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Assistant Professor, University of Macau

## Research Interests

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### Computer Vision and Uncertainty-aware Learning

Cross-view Object Matching, Novel View Synthesis and Analysis, 2D/3D Alignment

## Academic Qualifications

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|-----------------|---|
| 2017.1 - 2021.8 | Ph.D. in Software Engineering, University of Technology Sydney, Australia<br>(Advisor: Prof. Yi Yang) |
| 2012.9 - 2016.7 | B.S. in Computer Science and Technology, Fudan University, China<br>(Advisor: Prof. Xiangyang Xue)    |

## Work Experience

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|-------------------|---|
| 2023.12 - Present | Assistant Professor, University of Macau, Macau SAR, China  |
| 2021.9 - 2023.12  | Postdoc Research Fellow, National University of Singapore, Singapore<br>(Advisor: Prof. Tat-seng Chua and Prof. Angela Yao) |
| 2022.8 - 2023.4   | Adjunct Scientist at Sea AI Lab, Singapore  |
| 2020.3 - 2020.5   | Research Intern, Baidu Research, China  |
| 2018.7 - 2018.12  | Research Intern, Nvidia Research, USA   |

## Research Awards & Recognition & Competitions

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### Awards

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|-------------|---|
| 2021        | IEEE Circuits and Systems Society Outstanding Young Author Award<br>(1 recipient world-wide) (500 USD) <a href="#">[Link]</a> |
| 2021        | Zhejiang Lab's International Talent Fund for Young Professionals (30,000 CNY)   |
| 2021        | UTS Chancellor's Award List ( <i>University-wide best PhD dissertations award</i> )   |
| 2020        | UTS Vice-Chancellor's Conference Fund   |
| 2020        | UTS AAIL Student Best Paper Award   |
| 2020        | IEEE ICME Outstanding Reviewer Award  |
| 2013 - 2016 | Four-time First-class Scholarship at Fudan University   |
| 2013        | EMC Corp. Scholarship   |

### Chapter

Invited Chapter for the book *The Boundaries of Data* [\[Link\]](#)

### Competitions

|  |           |
|--|-----------|
| AICity Challenge: Language-based Vehicle Retrieval Challenge, Rank 1st / 15 teams        | CVPR 2021 |
| AICity Challenge: Vehicle Re-identification Challenge, Rank 2nd / 51 teams               | CVPR 2021 |
| Evoked Expressions from Videos (EEV) Challenge, Rank 2nd / 11 teams                      | CVPR 2021 |
| AICity Challenge: Vehicle Re-identification Challenge, Rank 1st / 64 teams               | CVPR 2020 |
| AICity Challenge: Vehicle Re-identification Challenge, Rank 4th / 84 teams               | CVPR 2019 |
| VisDA: Semi-Supervised Domain Adaptation Challenge, Rank 4th / 57 teams                  | ICCV 2019 |
| US Patent Application: Image identification using neural networks (No: US2020/0302176A1) |           |

## Teaching Record

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2024 CISC3021-001 Multimedia Forensics and Security @ University of Macau  
2024 CISC7404-001 Special Topics in Artificial Intelligence @ University of Macau

## Professional Services

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|----------------|---|
| Workshop Chair | Multimedia Object Re-ID (MORE), ACM ICMR 2024                               |
| Workshop Chair | Capturing the World from a New Perspective (UAVM), ACM MM 2023,2024         |
| Workshop Chair | Deep Multimodal Learning for Information Retrieval (MMIR), ACM MM 2023,2024 |
| Session Chair  | Responsible, Responsive, and Robust Multimedia Retrieval, ICME 2022         |
| Area Chair     | IEEE AVSS 2024, ACM MM 2024, ACM MM 2025, ICASSP 2025, IJCNN 2025           |
| Senior PC      | IJCAI 2021, AAAI 2024   |
| Guest Editor   | ACM TOMM Special Issue <a href="#">[Link]</a>                               |
| Reviewer       | TPAMI, IJCV, TIP, TMM, TCSVT, CVPR, ICCV, ECCV, and ACM MM                  |

## Recent Keynote & Invited Presentations

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|---|----------------------------------|
| Keynote speaker at AICity Challenge @ CVPR 2020 <a href="#">[Link]</a> and CVPR 2021 <a href="#">[Link]</a>                 |                                  |
| Tutorial speaker at Multimedia Content Understanding in Harsh Environments @ ACM MM 2022 <a href="#">[Link]</a>             |                                  |
| Tutorial speaker at Cross-view Geo-localization: Current Challenges and Future Frontiers @ WACV 2025 <a href="#">[Link]</a> |                                  |
| 2023.04: Data-centric Learning  | The University of Sheffield      |
| 2023.04: Data-centric Learning  | Nanyang Technological University |
| 2023.02: Learning from Imagining for Computer Vision  | City University of Hong Kong     |
| 2021.08: Data. Data! How to deal with Data Scarcity?  | Fudan University                 |
| 2021.07: Scene Understanding from Aerial View.  | Zhejiang University              |
| 2021.01: Visual Matching: From Re-identification to Geo-localization.   | Fudan University                 |
| 2020.12: Image Generation for Robust Image Retrieval.   | Alibaba Inc.                     |
| 2020.11: A Multi-view Multi-source Benchmark for Drone-based Geo-localization. <a href="#">[Link]</a>                       | UTS                              |
| 2020.08: Drone is coming  | UT Austin                        |

## Publications

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*Summary.* As of 1 Feb 2025, 54 papers have been published in top venues such as TPAMI, IJCV, TNNLS, TIP, TMM, CVPR, ICCV, ECCV and ACM MM. 9 papers are selected as ESI Highly Cited Paper. Google Scholar Citations = **11,101**, H-index = **33**.

## Refereed Journals

1. A Discriminatively Learned CNN Embedding for Person Re-identification.  
ACM Transactions on Multimedia Computing, Communications, and Applications (**TOMM**), 2018.  
**Zhedong Zheng**, Liang Zheng, Yi Yang (**ESI Highly Cited Paper, Cited by 1000+ times**)
2. Pedestrian Alignment Network for Large-scale Person Re-identification.  
IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2019.  
**Zhedong Zheng**, Liang Zheng, Yi Yang (**ESI Highly Cited Paper, Cited by 500+ times**)
3. VehicleNet: Learning Robust Visual Representation for Vehicle Re-identification.  
IEEE Transactions on Multimedia (**TMM**), 2020.  
**Zhedong Zheng**, Tao Ruan, Yunchao Wei, Yi Yang, Tao Mei
4. Dual-Path Convolutional Image-Text Embedding with Instance Loss.  
ACM Transactions on Multimedia Computing, Communications, and Applications (**TOMM**), 2020.  
**Zhedong Zheng**, Liang Zheng, Michael Garrett, Yi Yang, Mingliang Xu, Yi-Dong Shen (**ESI Highly Cited Paper, Cited by 500+ times**)

5. Rectifying Pseudo Label Learning via Uncertainty Estimation for Domain Adaptive Semantic Segmentation.  
International Journal of Computer Vision (**IJCV**), 2021.  
**Zhedong Zheng**, Yi Yang (**ESI Highly Cited Paper, Cited by 500+ times**)
6. Parameter-Efficient Person Re-identification in the 3D Space.  
IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2022.  
**Zhedong Zheng**, Xiaohan Wang, Nenggan Zheng, Yi Yang (**ESI Highly Cited Paper**)
7. Adaptive Boosting for Domain Adaptation: Towards Robust Predictions in Scene Segmentation.  
IEEE Transactions on Image Processing (**TIP**), 2022.  
**Zhedong Zheng**, Yi Yang
8. U-turn: Crafting Adversarial Queries with Opposite-direction Features.  
International Journal of Computer Vision (**IJCV**), 2022.  
**Zhedong Zheng**, Liang Zheng, Yi Yang, Fei Wu
9. Multi-pseudo Regularized Label for Generated Samples in Person Re-Identification.  
IEEE Transactions on Image Processing (**TIP**), 2018.  
Yan Huang, Jinsong Xu, Qiang Wu, **Zhedong Zheng**, Zhaoxiang Zhang, Jian Zhang
10. Camstyle: A Novel Data Augmentation Method for Person Re-identification.  
IEEE Transactions on Image Processing (**TIP**), 2018.  
Zhun Zhong, Liang Zheng, **Zhedong Zheng**, Shaozi Li, Yi Yang (**ESI Highly Cited Paper, Cited by 700+ times**)
11. Bayesian Query Expansion for Multi-camera Person Re-identification.  
Pattern Recognition Letters, 2018.  
Yutian Lin, **Zhedong Zheng**, Hong Zhang, Chenqiang Gao, Yi Yang
12. Improving Person Re-identification by Attribute and Identity Learning.  
Pattern Recognition (**PR**), 2019.  
Yutian Lin, Liang Zheng, **Zhedong Zheng**, Yu Wu, Zhilan Hu, Chenggang Yan, Yi Yang (**ESI Highly Cited Paper, Cited by 900+ times**)
13. Thorax Disease Classification with Attention Guided Convolutional Neural Network.  
Pattern Recognition Letters, 2020.  
Qingji Guan, Yaping Huang, Zhun Zhong, **Zhedong Zheng**, Liang Zheng, Yi Yang
14. Unsupervised Eyeglasses Removal in the Wild.  
IEEE Transactions on Cybernetics (**TCYB**), 2020.  
Bingwen Hu, **Zhedong Zheng**, Ping Liu, Wankou Yang, Mingwu Ren
15. Each Part Matters: Local Patterns Facilitate Cross-view Geo-localization.  
IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2021.  
Tingyu Wang, **Zhedong Zheng**, Chenggang Yan, Jiyong Zhang, Yaoqi Sun, Bolun Zheng, Yi Yang (**ESI Highly Cited Paper**)
16. Soft Person Re-identification Network Pruning via Block-wise Adjacent Filter Decaying.  
IEEE Transactions on Cybernetics (**TCYB**), 2021.  
Xiaodong Wang, **Zhedong Zheng**, Yang He, Fei Yan, Zhiqiang Zeng, Yi Yang
17. SPG-VTON: Semantic Prediction Guidance for Multi-pose Virtual Try-on.  
IEEE Transactions on Multimedia (**TMM**), 2022.  
Bingwen Hu, Ping Liu, **Zhedong Zheng**, Mingwu Ren
18. Joint Representation Learning and Keypoint Detection for Cross-view Geo-localization.  
IEEE Transactions on Image Processing (**TIP**), 2022.

Jinliang Lin, **Zhedong Zheng**, Zhun Zhong, Zhiming Luo, Shaozi Li, Yi Yang, Nicu Sebe

19. Align and Tell: Boosting Text-video Retrieval with Local Alignment and Fine-grained Supervision  
IEEE Transactions on Multimedia (**TMM**), 2022.

Xiaohan Wang, Linchao Zhu, **Zhedong Zheng**, Mingliang Xu, Yi Yang (**ESI Highly Cited Paper**)

20. Self-supervised Point Cloud Representation Learning via Separating Mixed Shapes.  
IEEE Transactions on Multimedia (**TMM**), 2022.

Chao Sun, **Zhedong Zheng\***, Xiaohan Wang, Mingliang Xu, Yi Yang (\*: Corresponding Author)

21. DMRNet++: Learning Discriminative Features with Decoupled Networks and Enriched Pairs for One-Step Person Search.

IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2022.

Chuchu Han, **Zhedong Zheng**, Kai Su, Dongdong Yu, Zehuan Yuan, Changxin Gao, Nong Sang, Yi Yang

22. Progressive Local Filter Pruning for Image Retrieval Acceleration

IEEE Transactions on Multimedia (**TMM**), 2023.

Xiaodong Wang, **Zhedong Zheng**, Yang He, Fei Yan, Zhiqiang Zeng, Yi Yang

23. Multi-View Consistent Generative Adversarial Networks for Compositional 3D-aware Image Synthesis  
International Journal of Computer Vision (**IJCV**), 2022.

Xuanmeng Zhang, **Zhedong Zheng**, Daiheng Gao, Bang Zhang, Yi Yang, Tat-Seng Chua

24. Jointly Harnessing Prior Structures and Temporal Consistency for Sign Language Video Generation  
ACM Transactions on Multimedia Computing, Communications, and Applications (**TOMM**), 2024.

Yucheng Suo, **Zhedong Zheng**, Xiaohan Wang, Bang Zhang, Yi Yang

25. Actively Discovering New Slots for Task-oriented Conversation

Transactions on Audio, Speech and Language Processing (**TASLP**), 2024.

Yuxia Wu, Tianhao Dai, **Zhedong Zheng**, Lizi Liao

26. Multiple-environment Self-adaptive Network for Aerial-view Geo-localization

Pattern Recognition (**PR**) 2024.

Tingyu Wang, **Zhedong Zheng**, Yaoqi Sun, Chenggang Yan, Yi Yang, Tat-Seng Chua

27. Self-ensembling depth completion via density-aware consistency

Pattern Recognition (**PR**) 2024.

Xuanmeng Zhang, **Zhedong Zheng\***, Minyue Jiang, Xiaoqing Ye (\*: Corresponding Author)

28. StepNet: Spatial-temporal Part-aware Network for Sign Language Recognition.

ACM Transactions on Multimedia Computing, Communications, and Applications (**TOMM**), 2024.

Xiaolong Shen, **Zhedong Zheng**, Yi Yang

29. Collaborative group: Composed image retrieval via consensus learning from noisy annotations.

Knowledge-Based Systems (**KBS**), 2024

Xu Zhang, **Zhedong Zheng**, Linchao Zhu, Yi Yang

30. High Fidelity Makeup via 2D and 3D Identity Preservation Net.

ACM Transactions on Multimedia Computing, Communications, and Applications (**TOMM**), 2024.

Jinliang Liu, **Zhedong Zheng**, Zongxin Yang, Yi Yang

31. Learning Cross-view Geo-localization Embeddings via Dynamic Weighted Decorrelation Regularization

IEEE Transactions on Geoscience and Remote Sensing (**TGRS**), 2024.

Tingyu Wang, **Zhedong Zheng**, Zunjie Zhu, Yuhan Gao, Yi Yang, Chenggang Yan

32. Scale Up Composed Image Retrieval Learning via Modification Text Generation

IEEE Transactions on Multimedia (**TMM**), 2025.

Yinan Zhou, Yaxiong Wang, Haokun Lin, Chen Ma, Li Zhu, **Zhedong Zheng**

## Refereed Conferences

1. Unlabeled Samples Generated by GAN Improve the Person Re-identification Baseline in vitro.  
IEEE International Conference on Computer Vision (**ICCV**), 2017. (Spotlight Oral)  
**Zhedong Zheng**, Liang Zheng, Yi Yang (**Cited by 2400+ times**) [[Video](#)]
2. Joint Discriminative and Generative Learning for Person Re-identification.  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019. (Oral)  
**Zhedong Zheng**, Xiaodong Yang, Zhiding Yu, Liang Zheng, Yi Yang, Jan Kautz (**Cited by 900+ times**) [[Video](#)]
3. University-1652: A Multi-view Multi-source Benchmark for Drone-based Geo-localization.  
ACM Multimedia (**ACM MM**), 2020.  
**Zhedong Zheng**, Yunchao Wei, Yi Yang [[Video](#)]
4. Unsupervised Scene Adaptation with Memory Regularization in vivo.  
International Joint Conference on Artificial Intelligence (**IJCAI**), 2020.  
**Zhedong Zheng**, Yi Yang
5. Macro-Micro Adversarial Network for Human Parsing.  
European Conference on Computer Vision (**ECCV**), 2018.  
Yawei Luo, **Zhedong Zheng**, Liang Zheng, Tao Guan, Junqing Yu, Yi Yang
6. Camera Style Adaptation for Person Re-identification.  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2018.  
Zhun Zhong, Liang Zheng, **Zhedong Zheng**, Shaozi Li, Yi Yang
7. Real-World Automatic Makeup via Identity Preservation Makeup Net.  
International Joint Conference on Artificial Intelligence (**IJCAI**), 2020.  
Zhikun Huang, **Zhedong Zheng**, Chenggang Yan, Hongtao Xie, Yaoqi Sun, Jianzhong Wang, Jiyong Zhang
8. Decoupled and Memory-Reinforced Networks: Towards Effective Feature Learning for One-Step Person Search.  
The AAAI Conference on Artificial Intelligence (**AAAI**), 2021.  
Chuchu Han, **Zhedong Zheng**, Changxin Gao, Nong Sang, Yi Yang
9. Multi-View Consistent Generative Adversarial Networks for 3D-aware Image Synthesis  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.  
Xuanmeng Zhang, **Zhedong Zheng**, Daiheng Gao, Bang Zhang, Pan Pan, Yi Yang
10. Are Binary Annotations Sufficient? Video Moment Retrieval via Hierarchical Uncertainty-based Active Learning  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023.  
Wei Ji, Renjie Liang, **Zhedong Zheng**, Wenqiao Zhang, Shengyu Zhang, Juncheng Li, Mengze Li, Tat-Seng Chua
11. Context-aware Pretraining for Efficient Blind Image Decomposition  
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023.  
Chao Wang, **Zhedong Zheng**, Ruijie Quan, Yifan Sun, Yi Yang
12. Learnable Pillar-based Re-ranking for Image-Text Retrieval  
ACM SIGIR (**SIGIR**), 2023.  
Leigang Qu, Meng Liu, Wenjie Wang, **Zhedong Zheng**, Liqiang Nie, Tat-Seng Chua

13. PiPa: Pixel-and Patch-wise Self-supervised Learning for Domain Adaptative Semantic Segmentation. ACM Multimedia (**ACM MM**), 2023.  
Mu Chen, **Zhedong Zheng**, Yi Yang, Tat-Seng Chua
14. Towards Unified Text-based Person Retrieval: A Large-scale Multi-Attribute and Language Search Benchmark. ACM Multimedia (**ACM MM**), 2023.  
Shuyu Yang, Yinan Zhou, **Zhedong Zheng**, Yaxiong Wang, Li Zhu, Yujiao Wu
15. Composed Image Retrieval with Text Feedback via Multi-grained Uncertainty Regularization. International Conference on Learning Representations (**ICLR**), 2024.  
Yiyang Chen, **Zhedong Zheng**, Wei Ji, Leigang Qu, Tat-Seng Chua
16. Towards Natural Language-Guided Drones: GeoText-1652 Benchmark with Spatial Relation Matching. European Conference on Computer Vision (**ECCV**), 2024.  
Meng Chu, **Zhedong Zheng**, Wei Ji, Tingyu Wang, Tat-Seng Chua
17. Approaching Outside: Scaling Open-world 3D Object Detection from 2D Scene. European Conference on Computer Vision (**ECCV**), 2024.  
Ruiyang Zhang, Hu Zhang, Hang Yu, **Zhedong Zheng**
18. Depth-Aware Blind Image Decomposition for Real-World Adverse Weather Recovery. European Conference on Computer Vision (**ECCV**), 2024.  
Chao Wang, **Zhedong Zheng**, Ruijie Quan, Yi Yang
19. Transferring to Real-World Layouts: A Depth-aware Framework for Scene Adaptation. ACM Multimedia (**ACM MM**), 2024. (Oral)  
Mu Chen, **Zhedong Zheng**, Yi Yang
20. From Data Deluge to Data Curation: A Filtering-WoRA Paradigm for Efficient Text-based Person Search. ACM Web Conference (**WWW**), 2025.  
Jintao Sun, Hao Fei, Gangyi Ding, **Zhedong Zheng**
21. Ctrl-U: Robust Conditional Image Generation via Uncertainty-aware Reward Modeling. International Conference on Learning Representations (**ICLR**), 2025.  
Guiyu Zhang, Huan-ang Gao, Zijian Jiang, Hao Zhao, **Zhedong Zheng**
22. Coarse-to-Fine Cross-modality Generation for Enhancing Vehicle Re-Identification with High-Fidelity Synthetic Data. IEEE International Conference on Robotics and Automation (**ICRA**), 2025  
Leyang Jin, Wei Ji, Tat-Seng Chua, **Zhedong Zheng**

## Open Source

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Codes and models for my published papers are available on my GitHub: <https://github.com/layumi> (8,000 stars and 2,000 followers)