Zhedong Zheng ⓘ

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Assistant Professor, University of Macau

Research Interests

Spatial Intelligence   AIGC   Data-centric AI   Object Re-identification

Academic Qualifications

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

Work Experience

2023.12 - Present	Assistant Professor, University of Macau, Macau SAR, China
2021.9 - 2023.12	Postdoc Research Fellow, National University of Singapore, Singapore (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

Awards

2021	IEEE Circuits and Systems Society Outstanding Young Author Award (*1 recipient world-wide*) (500 USD) [Link]
2021	Zhejiang Lab's International Talent Fund for Young Professionals ($\tilde{3}$0,000 CNY)
2021	UTS Chancellor's Award List (*University-wide best PhD dissertations award*)
2020	UTS Vice-Chancellor's Conference Fund
2020	UTS AAII 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 in *The Boundaries of Data*, published by Amsterdam University Press. [Open Access]

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

2024 CISC3021-001 Multimedia Forensics and Security @ University of Macau

2024 CISC7404-001 Special Topics in Artificial Intelligence @ University of Macau

2025 CISC7202-001 Tools for Machine Learning @ University of Macau (300+ students)

Professional Services

Publication Chair	ACM MM'25, IEEE AVSS'25
BNI Chair	ACM MM Asia'25
Area Chair	IEEE AVSS'24, ACM MM'24,'25, ICASSP'25, IJCNN'25
Workshop Chair	Multimedia Object Re-ID (MORE), ACM ICMR'24
Workshop Chair	Capturing the World from a New Perspective (UAVM), ACM MM'23,'24,'25
Workshop Chair	Deep Multimodal Learning for Information Retrieval (MMIR), ACM MM'23,'24
Guest Editor	ACM TOMM Special Issue [Link]
Session Chair	Responsible, Responsive, and Robust Multimedia Retrieval, ICME'22
Senior PC	IJCAI'21, AAAI'24
Reviewer	TPAMI, IJCV, TIP, TMM, TCSVT, CVPR, ICCV, ECCV, and ACM MM

Recent Keynote & Invited Presentations

Keynote speaker at AICity Challenge @ CVPR'20 [Link] and CVPR'21 [Link]
Tutorial speaker at Multimedia Content Understanding in Harsh Environments @ ACM MM'22 [Link]
Tutorial speaker at Cross-view Geo-localization @ WACV'25 [Link]

2025.11: Cognitive Biases in Large Multimodal Models	Nanjing University
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 [Link]	UTS
2020.08: Drone is coming	UT Austin

Publications

Summary. As of 27 Jan 2025, 67 papers have been accepted in top venues such as TPAMI, IJCV, TIP, TIFS, TNNLS, TMM, CVPR, ICCV, ECCV and ACM MM. 9 papers are selected as ESI Highly Cited Paper. Google Scholar Citations = **13,272**, H-index = **39**.

<u>Refereed Journals</u>

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** 700+ **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** 1000+ **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**

33. CAMeL: Cross-modality Adaptive Meta-Learning for Text-based Person Retrieval
Transactions on Information Forensics & Security (**TIFS**), 2025.
Hang Yu, Jiahao Wen, **Zhedong Zheng**

34. Joint Attribute Graph Reasoning and Aggregation for Composed Image Retrieval
IEEE Transactions on Multimedia (**TMM**), 2025.
Xiaotong Chen, Na Cai, **Zhedong Zheng**, Huaxin Pang, Ying Qin, Shikui Wei

35. CLIP-SR: Collaborative Linguistic and Image Processing for Super-Resolution
IEEE Transactions on Multimedia (**TMM**), 2025.
Bingwen Hu, Heng Liu, **Zhedong Zheng**, Ping Liu

36. Progressive Text-to-3D Generation for Automatic 3D Prototyping
ACM Transactions on Multimedia Computing, Communications, and Applications (**TOMM**), 2026.
Han Yi, **Zhedong Zheng**, Xiangyu Xu, Tat-seng Chua

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** 2500+ **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** 1000+ **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**

23. Video2BEV: Transforming Drone Videos to BEVs for Video-based Geo-localization.
IEEE International Conference on Computer Vision (**ICCV**), 2025
Hao Ju, Shaofei Huang, Si Liu, **Zhedong Zheng**

24. Harnessing Uncertainty-aware Bounding Boxes for Unsupervised 3D Object Detection.
IEEE International Conference on Computer Vision (**ICCV**), 2025
Ruiyang Zhang, Hu Zhang, **Zhedong Zheng**

25. Beyond Walking: A Large-Scale Image-Text Benchmark for Text-based Person Anomaly Search.
IEEE International Conference on Computer Vision (**ICCV**), 2025
Shuyu Yang, Yaxiong Wang, Li Zhu, **Zhedong Zheng**

26. UniAD: Integrating Geometric and Semantic Cues for Unified Anomaly Detection.
ACM Multimedia (**ACM MM**), 2025
Xiaodong Wang, Hongmin Hu, Fei Yan, Junwen Lu, Zhiqiang Zeng, Weidong Hong, **Zhedong Zheng**

27. Domain-Agnostic Neural Oil Painting via Normalization Affine Test-Time Adaptation
ACM International Conference on Multimedia (**ACM MM**) - BNI Track, 2025 (Oral)
Qichao Dong, Lingyu Liu, Yaxiong Wang, Jason Liu, **Zhedong Zheng**

28. VimoRAG: Video-based Retrieval-augmented 3D Motion Generation for Motion Language Models
NeurIPS, 2025
Haidong Xu, Guangwei Xu, **Zhedong Zheng**, Xiatian Zhu, Wei Ji, Xiangtai Li, Ruijie Guo, Meishan Zhang, Min Zhang, Hao Fei

29. WeatherPrompt: Multi-modality Representation Learning for All-Weather Drone Visual Geo-Localization
NeurIPS, 2025
Jiahao Wen, Hang Yu, **Zhedong Zheng**

30. When Words Smile: Generating Diverse Emotional Facial Expressions from Text
EMNLP, 2025
Haidong Xu, Meishan Zhang, Hao Ju, **Zhedong Zheng**, Erik Cambria, Min Zhang, Hao Fei

31. SketchThinker-R1: Towards Efficient Sketch-Style Reasoning in Large Multimodal Models International Conference on Learning Representations (**ICLR**), 2026
Ruiyang Zhang, Dongzhan Zhou, **Zhedong Zheng**

Open Source

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