

# Zhedong Zheng

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## Research Interests

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### Computer Vision and Multimedia Understanding

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 Computer Science, University of Technology Sydney, Australia (Advisor: Prof. Yi Yang)
2012.9 - 2016.7	B.S. in Computer Science, Fudan University, China (Advisor: Prof. Xiangyang Xue)

## Work Experience

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2021.9 - Present	Research Fellow, NExT++ Lab, National University of Singapore, Singapore (Advisor: Prof. Tat-seng Chua)
2022.8 - Present	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

## Teaching Record

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2022	Teaching Assistant for <i>Multimedia Analysis</i> @ National University of Singapore
2015	Teaching Assistant for <i>Fundamentals of Speech Recognition</i> @ Fudan University

## Professional Services

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Session Chair	Responsible, Responsive, and Robust Multimedia Retrieval, ICME 2022
Senior PC	IJCAI 2021
Reviewer	TPAMI, IJCV, TIP, TMM, TCSVT, CVPR, ICCV, ECCV, and ACM Multimedia

## Research Awards & Recognition & Competitions

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### Awards

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

### Research Recognition

2022	The 3rd Most Cited Paper on ACM TOMM (Lifetime) <a href="#">[Link]</a>
2022	Most Cited Paper in IEEE TCSVT 2019 <a href="#">[Link]</a>
2021	Most Influential 10 ICCV17 papers <a href="#">[Link]</a>

## 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)	

## Recent Keynote & Invited Presentations

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Keynote speaker at AICity Challenge @ CVPR 2020 and CVPR 2021	
Tutorial speaker at Multimedia Content Understanding in Harsh Environments @ ACM MM 2022	
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 Jan 2023, 30 papers have been published in top venues such as TPAMI, IJCV, TNNLS, TIP, TMM, CVPR, ICCV, and ECCV. 6 papers are selected as ESI Highly Cited Paper. Google Scholar Citations = **6,812**, H-index = **20**.

## 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 700+ 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 400+ 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
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 200+ 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
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 500+ 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 700+ 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. Heterogeneous Feature Alignment and Fusion in Cross-modal Augmented Space for Composed Image Retrieval  
IEEE Transactions on Multimedia (**TMM**), 2022.  
Xiaohan Wang, Linchao Zhu, **Zhedong Zheng**, Mingliang Xu, Yi Yang
20. Point Cloud Pre-training by Mixing and Disentangling.  
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

### 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)

**Zhedong Zheng**, Liang Zheng, Yi Yang (**Cited by 1700+ times**)

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 500+ times**)

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

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

### **Preprint Papers**

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1. 3D Magic Mirror: Clothing Reconstruction from a Single Image via a Causal Perspective.

**Zhedong Zheng**, Jiayin Zhu, Wei Ji, Yi Yang, Tat-Seng Chua

2. PiPa: Pixel-and Patch-wise Self-supervised Learning for Domain Adaptative Semantic Segmentation.

Mu Chen, **Zhedong Zheng**, Yi Yang, Tat-Seng Chua

3. Composed Image Retrieval with Text Feedback via Multi-grained Uncertainty Regularization.

Yiyang Chen, **Zhedong Zheng**, Wei Ji, Leigang Qu, Tat-Seng Chua

### **Open Source**

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Codes and models for my published papers are available on my GitHub: <https://github.com/layumi>  
(7,000 stars and 1,700 followers)