

# ZHEDONG ZHENG

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## Research Interests

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### Computer Vision and Machine Learning

Image Retrieval, Target Re-identification, Image-text Understanding  
Image Generation, Domain Adaptation, Adversarial Samples

## Education & Internships

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<b>University of Technology Sydney</b> , Sydney, Australia	2017 - 2021
Ph.D Student (Advisors: Prof. Yi Yang and Dr. Liang Zheng)	
<b>Fudan University</b> , Shanghai, China	2012 - 2016
B.S. in Computer Science (Advisor: Prof. Xiangyang Xue)	
<b>Baidu Research</b> , Beijing, China	2020
Remote Research Intern (Hosts: Mr. Minyue Jiang and Dr. Xiao Tan)	
<b>Nvidia Research</b> , San Jose, United States	2018
Research Intern (Hosts: Dr. Xiaodong Yang, Dr. Zhiding Yu and Dr. Jan Kautz)	

## Awards & Competitions

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### Awards

Outstanding Ph.D. Thesis on the Chancellor's List	2021
IEEE Circuits and Systems Society Outstanding Young Author Award ( <i>1 recipient world-wide</i> )	2021
Zhejiang Lab's International Talent Fund for Young Professionals (No.ZJ2020GZ021)	2021
UTS Vice-Chancellor's Conference Fund	2020
UTS AAI Student Best Paper Award	2020
IEEE ICME Outstanding Reviewer Award	2020
First-class Scholarship at Fudan University	2013, 2014, 2015, 2016
EMC Scholarship	2013

### 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 16357047	

## Publications

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### Journals

- Rectifying Pseudo Label Learning via Uncertainty Estimation for Domain Adaptive Semantic Segmentation.  
International Journal of Computer Vision (**IJCV**), 2021.  
**Zhedong Zheng**, Yi Yang
- 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**)

3. 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**)
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. VehicleNet: Learning Robust Visual Representation for Vehicle Re-identification.  
IEEE Transactions on Multimedia (**TMM**), 2020.  
**Zhedong Zheng**, Tao Ruan, Yunchao Wei, Yi Yang, Mei Tao
6. 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
7. 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**)
8. Bayesian query expansion for multi-camera person re-identification.  
Pattern Recognition Letters, 2018.  
Yutian Lin, **Zhedong Zheng**, Hong Zhang, Chenqiang Gao, Yi Yang
9. 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**)
10. Diagnose like a Radiologist: Attention Guided Convolutional Neural Network for Thorax Disease Classification.  
Pattern Recognition Letters, 2020.  
Qingji Guan, Yaping Huang, Zhun Zhong, **Zhedong Zheng**, Liang Zheng, Yi Yang
11. Unsupervised Eyeglasses Removal in the Wild.  
IEEE Transactions on Cybernetics (**TCYB**), 2020.  
Bingwen Hu, **Zhedong Zheng**, Ping Liu, Wankou Yang, Mingwu Ren
12. 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
13. 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
14. 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

### **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 1500+ 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
3. Unsupervised Scene Adaptation with Memory Regularization in vivo.  
International Joint Conference on Artificial Intelligence (**IJCAI**), 2020.  
**Zhedong Zheng**, Yi Yang
  4. University-1652: A Multi-view Multi-source Benchmark for Drone-based Geo-localization.  
ACM Multimedia (**ACM MM**), 2020.  
**Zhedong Zheng**, Yunchao Wei, Yi Yang
  5. Going beyond real data: A robust visual representation for vehicle re-identification  
IEEE Conference on Computer Vision and Pattern Recognition Workshop (**CVPR Workshop**), 2020  
**Zhedong Zheng**, Minyue Jiang, Zhigang Wang, Jian Wang, Zechen Bai, Xuanmeng Zhang, Xin Yu, Xiao Tan, Yi Yang, Shilei Wen and Errui Ding (**Challenge Winner**)
  6. Macro-Micro Adversarial Network for Human Parsing.  
European Conference on Computer Vision (**ECCV**), 2018.  
Luo Yawei, **Zhedong Zheng**, Liang Zheng, Tao Guan, Junqing Yu, Yi Yang
  7. 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
  8. 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
  9. 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
  10. 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

## ArXiv Papers

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1. Query Attack via Opposite-Direction Feature: Towards Robust Image Retrieval.  
**Zhedong Zheng**, Liang Zheng, Yi Yang, Fei Wu
2. Parameter-Efficient Person Re-identification in the 3D Space.  
**Zhedong Zheng**, Yi Yang
3. Adaptive Boosting for Domain Adaptation: Towards Robust Predictions in Scene Segmentation.  
**Zhedong Zheng**, Yi Yang
4. 3D Magic Mirror: Clothing Reconstruction from a Single Image via a Causal Perspective.  
**Zhedong Zheng**, Jiayin Zhu, Wei Ji, Yi Yang, Tat-Seng Chua
5. Progressive Local Filter Pruning for Image Retrieval Acceleration.  
Xiaodong Wang, **Zhedong Zheng**, Yang He, Fei Yan, Zhiqiang Zeng, Yi Yang
6. Understanding Image Retrieval Re-Ranking: A Graph Neural Network Perspective.  
Xuanmeng Zhang, Minyue Jiang, **Zhedong Zheng**, Xiao Tan, Errui Ding, Yi Yang

7. Point Cloud Pre-training by Mixing and Disentangling.  
Chao Sun, **Zhedong Zheng**, Xiaohan Wang, Mingliang Xu, Yi Yang

## Review Services

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IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)  
International Journal of Computer Vision (IJCV)  
IEEE Transactions on Image Processing (TIP)  
IEEE Transactions on Multimedia (TMM)  
IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)  
ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)  
Computer Vision and Pattern Recognition (CVPR)  
International Conference on Computer Vision (ICCV)  
European Conference on Computer Vision (ECCV)  
International Joint Conference on Artificial Intelligence (IJCAI)  
AAAI Conference on Artificial Intelligence (AAAI)  
ACM Multimedia (ACM MM)

## Invited Talk

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Keynote speaker at AICity Challenge @ CVPR 2021	
Keynote speaker at AICity Challenge @ CVPR 2020	
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

## Open Source

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Codes and models for my published papers are available on my GitHub: <https://github.com/layumi>  
(6,700 stars and 1,600 followers)