Liang Zheng

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Education and Work Experience

2018.11-	Australian National University	CS Futures Fellow/Lecturer
2018.4-2018.11	Singapore University of Technology and Design	Assistant Professor
2016.5-2018.3	University of Technology Sydney	Postdoctoral Research Associate
2015.9-2016.4	University of Texas at San Antonio	Postdoc Researcher
2010.8-2015.7	Tsinghua University	Ph.D. Electronic Engineering
2006.8-2010.7	Tsinghua University	B.S. School of Life Science

Research Projects and Grants

1. Sole Investigator, Data synthesis to quantitatively understand and improve vision systems. ARC DECRA, **AUD 400,000**, 2020-2022.
2. Lead Investigator, Occlusion-Aware Multi-Target Detection and Tracking. Seeing Machines Inc, **AUD 25,000**, 2020-2020.
3. Sole Investigator, Deep Learning with Weak Supervision. The ANU Alliances Development Fund, **AUD 25,000**, 2019-2020.
4. Sole Investigator, The ANU ECR Travel Grant, **AUD 3,000**, 2019-2020.
5. Associate Investigator, Australian Centre for Robotic Vision, 2019-2020.
6. Co-Investigator, Spatial CCTV. CSIRO CRP Fund, **AUD 40,000**, 2019-2019.
7. Principle Investigator, Hardware constrained adaptive visual analysis platform. IDC Infrustructure Fund, **SGD 94,759**, 2018-2018.
8. Principle Investigator, Technology Exploration and Translation for IoT Program. ST Engineering, **SGD 100,000**, 2018-2019.
9. Co-Principle Investigator, A Smart Unmanned Aerial Vehicle Based Imaging System for Inspection of Deep Hazardous Tunnels. PUB, **SGD 1,000,000**, 2018-2019.
10. Principle Investigator, Image-image domain adaptation. SUTD SRG, **SGD 100,000**, 2018-2018.
11. Lead Investigator, Large-scale person search with deep learning. UTS ECR Grant, **AUD 15,096**, 2016-2017.

Teaching

COMP3670/6670	Convenor	Introduction to Machine Learning	Sem 2 2020
COMP3670/6670	Convenor	Introduction to Machine Learning	Sem 2 2019
COMP4680/8650	Guest Lecturer	Advanced Topics in Statistical Machine Learning	Sem 1 2019

Student Supervision

Weijian Deng	PhD	Primary Supervisor	Jul 2019 -
Xiaoxiao Sun	PhD	Primary Supervisor	Aug 2019 -
Yunzhong Hou	PhD	Primary Supervisor	Mar 2019 -
Yuchi Liu	MPhil	Primary Supervisor	Mar 2019 -
Yue Yao	PhD	Associate Supervisor	Mar 2019 -
Kaiyue Lu	PhD	Associate Supervisor	Feb 2019 -
Heming Du	MPhil	Associate Supervisor	Dec 2019 -

Recognition and Honors

Discovery Early Career Researcher Award (DECRA)	Australian Research Council (ARC)	2020
Wen-Tsün Wu Award	Chinese Association for Artificial Intelligence	2019
1st prize	Close-set Word-level Speech Recognition	ICMI 2019
1st prize	Visual Keyword Spotting, Audio-Visual Speech Recognition Challenge	ICMI 2019
Outstanding Reviewer	CVPR	2019
1st prize	Micro-Expression Grand Challenge	FG 2019
The best of the rest from the Physics arXiv preprint server	MIT Technology Review	2015
Best Paper Runner Up	PAKDD 2018 workshop	2018
Early Career R & D Award	D2D CRC	2017
Outstanding PhD Thesis	Chinese Association for Artificial Intelligence	2017
Travel Grant Award for Doctoral Consortium	CVPR, ICCV	2015
Stars of Tomorrow	Microsoft Research Asia	2015
Outstanding Graduate	Tsinghua University	2015

Professional Service

Tutorial Chair	ACM Multimedia Asia, 2021
Area Chair	CVPR 2021
Area Chair	ACM Multimedia 2020
Area Chair	ECCV 2020
Associate Editor	IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
Workshop Organizer	4th AI CITY Challenge Workshop, CVPR 2020
Senior PC	AAAI 2020, IJCAI 2019, IJCAI 2020
Tutorial Organizer	Textures, Objects, Scenes, CVPR 2019
Workshop Organizer	Target Re-Identification and Multi-Target Multi-Camera Tracking, CVPR 2019
Associate Editor	Visual Computer Journal
Area Chair	ICMR 2019
Session Chair	Multimedia Technologies Empowering Retail Experiences, ICME 2019
Tutorial Organizer	Representation Learning in Pedestrian Re-identification, ECCV 2018
Tutorial Organizer	Person Re-identification: State of the Art and Future Trend, ICPR 2018
Area Chair	ICPR 2018
Reviewer	TPAMI, IJCV, TIP, TMM, TCSVT, CVPR, ICCV, ECCV, and ACM Multimedia

Selected Talks

Instance Retrieval: From BoW to CNN	CVPR 2019	June 2019
Annual Review of Person Re-identification	VALSE 2019	Apr 2019
Representation Learning for Pedestrian Re-identification	ECCV 2018	Sep 2018
Improving Person Re-identification with the GANs	VALSE 2018	Apr 2018
Domain Adaptive Learning	Tsinghua University	Apr 2018
Generalizing A Person Retrieval Model Hetero- and Homogeneously	Nankai University	Sep 2018
Beyond Part Models: Person Retrieval with Refined Part Pooling	UCAS	Dec 2018
Fine-grained Object Recognition	Peking University	July 2017
End-to-end Detection and Recognition Learning	Stanford	April 2017

Publications

Summary. As of 5 May 2020, 40 papers have been published in top venues such as IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), International Journal of Computer Vision (IJCV), International Conference on Computer Vision (ICCV), IEEE Conference on Computer Vision and Pattern Recognition (CVPR) and European Conference on Computer Vision (ECCV). Google Scholar Citations = 9,357, H-Index = 37.

Referred Journal Papers

1. Weijian Deng*, **Liang Zheng**, Jianbin Jiao, "Rethinking Triplet Loss for Domain Adaptation", IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), accepted.
2. Yifan Sun, **Liang Zheng**, Yi Yang, Qi Tian, Shengjin Wang, "Learning Part-based Convolutional Features for Person Re-identification", IEEE Transactions on Pattern Analysis and Machine Intelligence, accepted, 2019. **Impact**: Our algorithm is widely used by renowned universities and leading companies around the world.
3. Xuanyi Dong, **Liang Zheng**, Fan Ma, Yi Yang, Deyu Meng, "Few-Example Object Detection with Model Communication", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Vol. 41, Issue 7, pp. 1641 - 1654, 2019.
4. Yutian Lin, **Liang Zheng**, Zhedong Zheng, Yu Wu, Zhilan Hu, Chenggang Yan, Yi Yang, "Improving person re-identification by attribute and identity learning", Pattern Recognition Vol. 95, pp. 151-161, 2019.
5. **Liang Zheng**, Yujia Huang, Yi Yang, Huchuan Lu, "Pose invariant embedding for deep person re-identification", IEEE Transactions on Image Processing, Vol. 28, Issue 9, pp. 4500-4509, 2019.
6. Zhun Zhong, **Liang Zheng**, Zhedong Zheng, Shaozi Li, Yi Yang, "CamStyle: A Novel Data Augmentation Method for Person Re-identification", IEEE Transactions on Image Processing, Vol. 28, Issue 2, pp. 1176-1190, 2019.
7. Zhedong Zheng, **Liang Zheng**, and Yi Yang, "Pedestrian alignment network for large-scale person re-identification", IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2018, accepted.
8. Hehe Fan, **Liang Zheng**, Yi Yang, "Unsupervised Person Re-identification: Clustering and Fine-tuning", ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM), 2018, Vol. 14, Issue 4, pp. 83.
9. Jufeng Yang, Xiaoxiao Sun, Yu-Kun Lai, **Liang Zheng**, Ming-Ming Cheng, "Recognition from Web Data: A Progressive Filtering Approach", IEEE Transactions on Image Processing, Vol. 27, Issue 18, pp. 5303 - 5315, 2018.
10. **Liang Zheng**, Yi Yang, Qi Tian, "SIFT Meets CNN: A Decade Survey of Instance Retrieval", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Vol. 40, Issue 5, pp. 1224-1244, 2018. **Impact**: A comprehensive summary of instance search over the past decade. Highly Cited Paper by Web of Science. Cited 213 times.
11. Zhedong Zheng, **Liang Zheng**, et al., "A Discriminatively Learned CNN Embedding for Person Re-identification", ACM Transactions on Multimedia Computing, Communications, and Applications, Vol. 14, Issue 1, pp. 13, 2018. **Impact**: Highly Cited Paper by Web of Science. Cited 248 times.
12. Yuting Hu, **Liang Zheng**, Yi Yang, Yongfeng Huang, "Twitter100k: A Real-world Dataset for Weakly Supervised Cross-Media Retrieval", IEEE Transactions on Multimedia (TMM), 2017, Vol. 20, Issue 4, pp. 927-938, 2018.

13. Zhong Zhang, Shuang Liu, Xing Mei, Baihua Xiao, and **Liang Zheng**, "Learning Completed Discriminative Local Features for Texture Classification", Pattern Recognition, Vol. 67, pp. 263-275, 2017.
14. Ziqiong Liu, Shengjin Wang, **Liang Zheng**, and Qi Tian, "Robust ImageGraph: Rank-Level Feature Fusion for Image Search", IEEE Transactions on Image Processing, Vol. 26, Issue 7, pp. 3128-3141, 2017.
15. **Liang Zheng**, Shengjin Wang, Jingdong Wang, Qi Tian, "Accurate Image Search with Multi-Scale Contextual Evidences", International Journal of Computer Vision (IJCV), pp. 1-13, 2016.
16. **Liang Zheng**, Shengjin Wang, and Qi Tian, "$\mathcal{L}$p-norm IDF for Scalable Image Retrieval", IEEE Transactions on Image Processing, Vol. 23, Issue 8, pp. 3604-3617, 2014.
17. **Liang Zheng**, Shengjin Wang, Qi Tian, "Coupled Binary Embedding for Large-scale Image Retrieval", IEEE Transactions on Image Processing, Vol. 23, Issue 8, pp. 3368-3380, 2014. **Impact**: An important new data index method. Highly Cited Paper by Web of Science. Cited 122 times.
18. **Liang Zheng**, Shengjin Wang, Ziqiong Liu, and Qi Tian, "Fast Image Retrieval: Query Pruning and Early Termination", IEEE Transactions on Multimedia, Vol. 17, Issue 5, pp. 648-659, 2015.

Referred Conference Papers

1. Yunzhong Hou*, **Liang Zheng**, Stephen Gould, "Learning to Structure an Image with Few Colors", CVPR 2020.
2. Kaiyue Lu*, Nick Barnes, Saeed Anwar, **Liang Zheng**, "From Depth What Can You See? Depth Completion via Auxiliary Image Reconstruction", CVPR 2020.
3. Ziwei Zhang, Chi Su, **Liang Zheng**, Xiaodong Xie, "Correlating Edge, Pose with Parsing", CVPR 2020.
4. Yifan Sun, Changmao Cheng, Yuhan Zhang, **Liang Zheng**, Zhongdao Wang, Chi Zhang, Yichen Wei, "Circle Loss: a Unified Perspective of Pair Similarity Optimization", CVPR 2020.
5. Zhun Zhong, **Liang Zheng**, Guoliang Kang, Shaozi Li, Yi Yang, "Random Erasing Data Augmentation", AAAI 2020. **Impact**: A widely used data augmentation approach; it is included into the official Pytorch package.
6. Xiaoxiao Sun*, **Liang Zheng**, "Dissecting Person Re-identification from the Viewpoint of Viewpoint", CVPR, 2019. **Impact**: An early attempt to assess the impact of environmental factors on system accuracy. A new synthetic dataset is introduced.
7. Yawei Luo, **Liang Zheng**, Tao Guan, Junqing Yu, Yi Yang, "Taking A Closer Look at Domain Shift: Category-level Adversaries for Semantics Consistent Domain Adaptation", CVPR, 2019.
8. Zhongdao Wang, **Liang Zheng**, Yali Li, Shengjin Wang, "Linkage Based Face Clustering via Graph Convolution Network", CVPR, 2019.
9. Zhun Zhong, **Liang Zheng**, Zhiming Luo, Shaozi Li, Yi Yang "Invariance Matters: Exemplar Memory for Domain Adaptive Person Re-identification", CVPR, 2019.
10. Zhedong Zheng, Xiaodong Yang, Zhiding Yu, **Liang Zheng**, Yi Yang, Jan Kautz, "Joint Discriminative and Generative Learning for Person Re-identification", CVPR, 2019.
11. Guoliang Kang, **Liang Zheng**, Yan Yan, Yi Yang, "Deep Adversarial Attention Alignment for Unsupervised Domain Adaptation: the Benefit of Target Expectation Maximization", ECCV, pp.420-436, 2018.

12. Yifan Sun, **Liang Zheng**, Yi Yang, Qi Tian, Shengjin Wang, "Beyond Part Models: Person Retrieval with Refined Part Pooling (and A Strong Convolutional Baseline)", ECCV, pp. 501-518, 2018. **Impact**: Used by many companies like NVIDIA.

13. Zhun Zhong, **Liang Zheng**, Shaozi Li, Yi Yang, "Generalizing A Person Retrieval Model Hetero- and Homogeneously", ECCV, pp. 176-192, 2018.

14. Yawei Luo, Zhedong Zheng, **Liang Zheng** Yi Yang, "Macro-Micro Adversarial Network for Human Parsing", ECCV, pp. 424-440, 2018.

15. Jiong Wang, Yingying Zhu, Lingxi Xie, **Liang Zheng**, "Attention-based Pyramid Aggregation Network for Visual Place Recognition", ACM Multimedia, pp. 99-107, 2018.

16. Zhun Zhong, **Liang Zheng**, Zhedong Zheng, Shaozi Li, Yi Yang, "Camera Style Adaptation for Person Re-identification", CVPR, pp. 5157-5166, 2018.

17. Weijian Deng, **Liang Zheng**, Guoliang Kang, Yi Yang, Qixiang Ye, Jianbin Jiao, "Image-Image Domain Adaptation with Preserved Self-Similarity and Domain-Dissimilarity for Person Re-identification", CVPR, pp. 994-1003, 2018.

18. Zhedong Zheng, **Liang Zheng**, Yi Yang, "Unlabeled Samples Generated by GAN Improves the Person Re-identification Baseline in vitro", ICCV, pp. 3754-3762, 2017. **Impact**: Early report of using GANs in supervised learning. Top-10 higly cited paper in ICCV 2017. Cited 448 times.

19. Yifan Sun, **Liang Zheng**, Weijian Deng, Shengjin Wang, "SVDNet for Pedestrian Retrieval", ICCV, pp. 3800-3808, 2017.

20. **Liang Zheng**, Hengheng Zhang, Shaoyan Sun, Manmohan Chandraker, Yi Yang, Qi Tian, "Person Re-identification in the Wild", CVPR, pp. 1367-1376, 2017.

21. Zhun Zhong, **Liang Zheng**, Donglin Cao, Shaozi Li, "Re-ranking Person Re-identification with k-reciprocal Encoding", CVPR, pp. 1318-1327, 2017. **Impact**: An effective re-ranking method to improving person re-identification accuracy. Cited 336 times.

22. **Liang Zheng**, Zhi Bie, Yifan Sun, Jingdong Wang, Chi Su, Shengjin Wang, Qi Tian,"MARS: A Video Benchmark for Large-Scale Person Re-identification", ECCV, pp. 868-884, 2016. **Impact**: Proposed a widely used baseline ID discriminative embedding (IDE) and the MARS benchmark. Cited 304 times.

23. Lingxi Xie*, **Liang Zheng***, Jingdong Wang, Alan Yuille, Qi Tian, "InterActive: Inter-Layer Activeness Propagation", CVPR, pp. 270-279, 2016. (* equal contribution)

24. **Liang Zheng**, Liyue Shen, Lu Tian, Shengjin Wang, Jingdong Wang, Qi Tian, "Scalable Person Re-identification: A Benchmark", ICCV, pp. 1116-1124, 2015. **Impact**: Featured by MIT Technology Review. Pioneering work in the re-id community. Cited 917 times.

25. **Liang Zheng**, Shengjin Wang, Lu Tian, Fei He, Ziqiong Liu, Qi Tian, "Query-Adaptive Late Fusion for Image Search and Person Re-identification", CVPR, pp. 1741-1750, 2015. **Impact**: an effective late fusion method that can identify good features and bad features and fuse them adaptively. Cited 241 times.

26. **Liang Zheng**, Shengjin Wang, Ziqiong Liu, Qi Tian, "Packing and Padding: Coupled Multi-index for Accurate Image Retrieval", CVPR, pp. 1939-1946, 2014. **Impact**: Selected into CS231n of Stanford University. Cited 195 times.

27. **Liang Zheng**, Shengjin Wang, Wengang Zhou, Qi Tian, "Bayes Merging of Multiple Vocabularies for Scalable Image Retrieval", CVPR, pp. 1955-1962, 2014.

28. **Liang Zheng**, Shengjin Wang, Ziqiong Liu, Qi Tian, "$\mathcal{L}$p-norm IDF for Large Scale Image Search", CVPR, pp. 1626-1633, 2013.

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