

# Liang Zheng

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## Education

Ph.D. Electronic Engineering, Tsinghua University, 2010.8-2015.7.

B.S. School of Life Science, Tsinghua University, 2006.8-2010.7.

## Work Experience

University of Technology Sydney, Postdoc, 2016.05-  
*Project: logo detection in videos and large-scale person re-identification in videos.*

NEC Labs America & University of Texas at San Antonio, Postdoc, 2015.10-2016.04  
*Project: image retrieval, image classification, person re-identification in videos. In image retrieval and classification, we propose several simple techniques to improve the accuracy, and state-of-the-art performance is achieved. In person re-identification, we collect and annotate the Motion Analysis and Re-identification Set (MARS) dataset for recognition in videos. It is shown that the rich visual information in videos significantly improves recognition accuracy.*

Microsoft Research Asia, Intern, 2014.12-2015.07.  
*Project: person segmentation with the Convolutional Neural Networks. We use CNN to train the segmentation model, and the project has been transferred to MSRA product center.*

University of Texas at San Antonio, Visiting Scholar, 2014.01-2014.07.  
*Project: large-scale image retrieval. We have reported the state-of-the-art performance in image retrieval, and two papers were accepted to CVPR 2014.*

## Fields of Research Interest

Image Retrieval and Classification, Person Re-identification, Video Analysis, Deep Learning.

## Publications

Up to June. 12, 27 papers have been published in top venues such as TPAMI, IJCV, ICCV/CVPR/ECCV, IEEE Transactions on Image Processing, etc. Google Scholar Citations = 751, H-Index = 15.

### Conference Papers

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

Zhun Zhong, **Liang Zheng**, Donglin Cao, and Shaozi Li, "Re-ranking Person Re-identification with k-reciprocal Encoding", CVPR 2017.

**Liang Zheng**, Zhi Bie, Yifan Sun, Jingdong Wang, Chi Su, Shengjin Wang, and Qi Tian, "MARS: A Video Benchmark for Large-Scale Person Re-identification", European Conference on Computer Vision (ECCV) 2016.

Ying Li, Xiangwei Kong, **Liang Zheng**, Qi Tian, "Exploiting Hierarchical Activations of Neural Network for Image Retrieval", ACM Multimedia, short paper, 2016.

Lingxi Xie\*, **Liang Zheng**\*, Jingdong Wang, Alan Yuille, and Qi Tian, "InterActive: Inter-Layer Activeness Propagation", International Conference on Computer Vision and Pattern Recognition (CVPR) 2016. (\* equal contribution)

**Liang Zheng**, Liyue Shen, Lu Tian, Shengjin Wang, Jingdong Wang, and Qi Tian, "Scalable Person Re-identification: A Benchmark", International Conference on Computer Vision (ICCV) 2015.

**Liang Zheng**, Shengjin Wang, Lu Tian, Fei He, Ziqiong Liu, and Qi Tian, "Query-Adaptive Late Fusion for Image Search and Person Re-identification", International Conference on Computer Vision and Pattern Recognition (CVPR) 2015.

**Liang Zheng**, Shengjin Wang, Ziqiong Liu, and Qi Tian, "Packing and Padding: Coupled Multi-index for Accurate Image Retrieval", International Conference on Computer Vision and Pattern Recognition (CVPR) 2014.

**Liang Zheng**, Shengjin Wang, Wengang Zhou, and Qi Tian, "Bayes Merging of Multiple Vocabularies for Scalable Image Retrieval", International Conference on Computer Vision and Pattern Recognition (CVPR) 2014.

**Liang Zheng**, Shengjin Wang, Ziqiong Liu, and Qi Tian, " $\mathcal{L}_p$ -norm IDF for Large Scale Image Search", International Conference on Computer Vision and Pattern Recognition (CVPR) 2013.

Ziqiong Liu, Shengjin Wang, **Liang Zheng**, and Qi Tian, "Visual reranking with improved image graph", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2014.

**Liang Zheng**, Shengjin Wang, and Qi Tian, "Coloring image search with coupled multi-index", IEEE China Summit and International Conference on Signal and Information Processing (ChinaSIP), 2015.

### *Journal Articles*

**Liang Zheng**, Yi Yang, Qi Tian, "SIFT Meets CNN: A Decade Survey of Instance Retrieval", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2017, accepted.

Fuqing Zhu, Xiangwei Kong, **Liang Zheng**, Haiyan Fu, and Qi Tian, "Part-based Deep Hashing for Large-scale Person Re-identification", IEEE Transactions on Image Processing, 2017, accepted.

Zhong Zhang, Shuang Liu, Xing Mei, Baihua Xiao, and **Liang Zheng**, "Learning Completed Discriminative Local Features for Texture Classification", Pattern Recognition, 2017, accepted.

Ziqiong Liu, Shengjin Wang, **Liang Zheng**, and Qi Tian, "Robust ImageGraph: Rank-Level Feature Fusion for Image Search", IEEE Transactions on Image Processing, 2017, accepted.

**Liang Zheng**, Shengjin Wang, Jingdong Wang, and Qi Tian, "Accurate Image Search with Multi-Scale Contextual Evidences", International Journal of Computer Vision (IJCV), pp. 1-13, 2016.

**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.

**Liang Zheng**, Shengjin Wang, and Qi Tian, "Coupled Binary Embedding for Large-scale Image Retrieval", IEEE Transactions on Image Processing, Vol. 23, Issue 8, pp. 3368-3380, 2014.

**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.

**Liang Zheng**, Shengjin Wang, Peizhen Guo, Hanyue Liang, and Qi Tian, "Tensor Index for Large Scale Image Retrieval", Multimedia Systems, 2014.

**Liang Zheng**, Shengjin Wang, "Visual Phraselet: Refining Spatial Constraints for Large Scale Image Search", IEEE Signal Processing Letters, Vol. 20, Issue 4, pp. 391-394, 2013.

## Grants

**2017-2017, Chief Investigator:** Video to Text Description. \$10,000

**2017-, UTS Early Career Researcher Grant:** Large-Scale Person Search with Deep Learning. \$15,096.

**2016-, Chief Investigator:** UAV Flight Formation with Deep Matching. \$60,000.

**2016-, Chief Investigator:** Combining Hand-Crafted and Deeply Learned Features for Logo Detection over Large Scale Imaginary Data. \$45,000.

## Fellowships & Awards

CSIRO Fellowship on "Deep Learning Smart Systems for Education Management", 2017-2019.

Travel Grant Award from ICCV Doctoral Consortium 2015.

Travel Grant Award from CVPR Doctoral Consortium 2015.

ArXiv paper "Person Re-identification Meets Image Search" is covered in "MIT Technology Review" as "The best of the rest from the Physics arXiv preprint server".

Stars of Tomorrow, Microsoft Research Asia, 2015.

Promising Young Researchers, Department of Electronic Engineering, 2015.

Promising Young Researchers, Department of Electronic Engineering, 2014.

National Scholarship, 2014

Outstanding Graduate of Tsinghua University, 2010

National Scholarship, 2006, 2007, 2008

## Service

### *Reviewer for Conferences*

International Conference on Computer Vision (ICCV), 2017

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017

European Conference on Computer Vision (ECCV), 2016

ACM International Conference on Multimedia (ACM MM), 2014, 2016

ACM International Conference on Image Processing (ICIP), 2015, 2016, 2017

Pacific-Rim Conference on Multimedia (PCM), 2016

*Reviewer for Journals*

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

IEEE Transactions on Image Processing (TIP)

IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)

IEEE Transactions on Multimedia (TMM)

IEEE Transactions on Big Data (TBD)

IEEE Signal Processing Letters (SPL)

IEEE Pattern Recognition Letters (PRL)

Journal of Visual Communication and Image Representation

KSII Transactions on Internet and Information Systems

Pattern Recognition

IEEE Signal Processing Letters

Image and Vision Computing

Neurocomputing

Machine Vision and Applications (MVA)

Multimedia Systems

Eurasip Journal on Wireless Communications and Networking

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