

SUN Qianru

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**Education**

PhD, Peking University, China, 2016

Bachelor of Science, Nanjing University of Posts & Telecommunications, China, 2010

Academic Appointments

Assistant Professor of Information Systems, School of Computing and Information Systems, SMU, Aug 2019 - Present

RESEARCH**Publications**Journal Articles [Refereed]

Meta-transfer learning through hard tasks, by SUN, Qianru; LIU, Yaoyao; CHEN Zhaozheng; CHUA Tat-Seng; SCHIELE Bernt. (2020). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 1-14. (Advance Online)

Generating face images with attributes for free, by LIU, Yaoyao; SUN, Qianru; HE Xiangnan; LIU An-An; SU Yuting; CHUA Tat-Seng. (2020). *IEEE Transactions on Neural Networks and Learning Systems*, <https://doi.org/10.1109/TNNLS.2020.3007790> (Advance Online)

A compact representation of human actions by sliding coordinate coding, by DING, Runwei; SUN, Qianru; LIU, Mengyuan; LIU, Hong. (2017). *International Journal of Advanced Robotic Systems*, 14 (6), 1-12. <https://doi.org/10.1177/1729881417746114> (Published)

Online growing neural gas for anomaly detection in changing surveillance scenes, by SUN, Qianru; LIU, Hong; HARADA, Tatsuya. (2017). *Pattern Recognition*, 64 187-201. <https://doi.org/10.1016/j.patcog.2016.09.016> (Published)

Human activity prediction by mapping grouplets to recurrent self-organizing map, by SUN, Qianru; LIU, Hong; LIU, Mengyuan; ZHANG, Tianwei. (2016). *Neurocomputing*, 177 427-440. (Published)

A novel hierarchical Bag-of-Words model for compact action representation, by SUN, Qianru; LIU, Hong; LIU, Hong; MA, Liqian; ZHANG, Tianwei. (2016). *Neurocomputing*, 174 722-732. <https://doi.org/10.1016/j.neucom.2015.09.074> (Published)

Salient pairwise spatio-temporal interest points for real-time activity recognition, by LIU, Mengyuan; LIU, Hong; SUN, Qianru; ZHANG, Tianwei; DING, Runwei. (2016). *CAAI Transactions on Intelligence Technology*, 1 (1), 14-29. <https://doi.org/10.1016/j.trit.2016.03.001> (Published)

Robust tracking with discriminative ranking middle-level patches, by LIU, Hong; LIANG, Zilin; SUN Qianru. (2014). *International Journal of Advanced Robotic Systems*, 11 1-9. <https://doi.org/10.5772/58430> (Published)

Conference Proceedings

Causal intervention for weakly-supervised semantic segmentation, by ZHANG Dong; ZHANG, Hanwang; TANG, Jinhui; HUA, Xian-Sheng; SUN, Qianru. (2020). *Proceedings of the 34th Conference on Neural Information Processing Systems, NeurIPS 2020, Vancouver, Canada, December 6-12*, (pp. 1-12) Virtual Conference: (Published)

Interventional few-shot learning, by YUE, Zhongqi; ZHANG Hanwang; SUN, Qianru; HUA, Xian-Sheng. (2020). *Proceedings of the 34th Conference on Neural Information Processing Systems, NeurIPS 2020, Vancouver, Canada, December 6-12*, (pp. 1-23) Virtual Conference: (Published)

Feature pyramid transformer, by ZHANG, Dong; ZHANG, Hanwang; TANG, Jinhui; WANG, Meng; HUA, Xian-Sheng; SUN, Qianru. (2020). *Proceedings of the 16th European Conference on Computer Vision, ECCV 2020, Virtual, August 23-28*, (pp. 323-339) Glasgow, UK: Springer. (Published)

An ensemble of epoch-wise empirical bayes for few-shot learning, by LIU, Yaoyao; SCHIELE, Bernt; SUN, Qianru. (2020). *Proceedings of the 16th European Conference on Computer Vision, ECCV 2020, Virtual, August 23-28*, (pp. 404-421) Glasgow, UK: Springer. (Published)

Mnemonics training: Multi-class incremental learning without forgetting, by LIU, Yaoyao; SU, Yuting; LIU, An-An; SCHIELE, Bernt; SUN, Qianru. (2020). *Proceedings of the 33rd Conference on Computer Vision and Pattern Recognition, CVPR '20, Virtual Conference, June 14-19*, (pp. 12245-12254) Virtual Conference: IEEE.

https://openaccess.thecvf.com/content_CVPR_2020/papers/Liu_Mnemonics_Training_Multi-Class_Incremental_Learning_Without_Forgetting_CVPR_2020_paper.pdf (Published)

Visual commonsense representation learning via causal inference, by WANG, Tan; HUANG, Jianqiang; ZHANG, Hanwang; SUN Qianru. (2020). *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, Virtual Conference, June 14-19*, (pp. 1-4) Virtual Conference: IEEE. (Published)

Visual Commonsense R-CNN, by WANG, Tan; HUANG, Jianqiang; ZHANG, Hanwang; SUN, Qianru. (2020). *Proceedings of the 33rd Conference on Computer Vision and Pattern Recognition, CVPR '20, Washington, United States: IEEE*. <https://doi.org/10.1109/CVPR42600.2020.01077> (Published)

Teacher-student networks with multiple decoders for solving math word problem, by ZHANG, Jipeng; LEE, Roy Ka-Wei; LIM, Ee-Peng; QIN, Wei; WANG, Lei; SHAO, Jie; SUN, Qianru. (2020). *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence 2020: Yokohama*, (pp. 4011-4017) Menlo Park, CA: IJCAI. <https://doi.org/10.24963/ijcai.2020/555> (Published)

Learning to self-train for semi-supervised few-shot classification, by LI, Xinzhe; SUN, Qianru; LIU, Yaoyao; ZHENG, Shibao; ZHOU, Qin; CHUA, Tat-Seng; SCHIELE, Bernt. (2019). *Advances in Neural Information Processing Systems: 33rd Conference on Neural Information Processing Systems (NeurIPS 2019), Vancouver, Canada, December 8*, (pp. 1-11) La Jolla, CA: NIPS. (Published)

Mixed-dish recognition with contextual relation networks, by DENG, Lixi; CHEN, Jingjing; SUN, Qianru; HE, Xiangnan; TANG, Sheng; MING, Zhaoyan; ZHANG, Yongdong; CHUA, Tat-Seng. (2019). *MM '19: Proceedings of the 27th ACM International Conference on Multimedia, Nice, October 21-25*, (pp. 112-120) New York: ACM. <https://doi.org/10.1145/3343031.3351147> (Published)

Self-refining deep symmetry enhanced network for rain removal, by LIU, Hong; YE, Hanrong; LI, Xia; SHI, Wei; LIU, Mengyuan; SUN, Qianru. (2019). *2019 IEEE International Conference on Image Processing (ICIP 2019)*, (pp. 2786-2790) Taipei: IEEE. <https://doi.org/10.1109/ICIP.2019.8803265> (Published)

Generating expensive relationship features from cheap objects, by WANG, Xiaogang; SUN, Qianru; ANG, Marcelo; CHUA, Tat-Seng. (2019). *BMVC 2019: 30th British Machine Vision Conference: Cardiff, September 9-12: Proceedings*, (pp. 1-16) Cardiff: BMVC. <https://bmvc2019.org/programme/detailed-programme/> (Published)

Meta-transfer learning for few-shot learning, by SUN, Qianru; LIU, Yaoyao; CHUA, Tat-Seng; SCHIELE, Bernt. (2019). *2019 IEEE/CVF Conference on Computer Vision and Pattern Recognition: Long Beach, CA*,

June 16-20: *Proceedings*, (pp. 403-412) Los Alamitos, CA: IEEE Computer Society.
<https://doi.org/10.1109/CVPR.2019.00049> (Published)

A hybrid model for identity obfuscation by face replacement, by SUN, Qianru; TEWARI, Ayush; XU, Weipeng; FRITZ, Mario; THEOBALT, Christian; SCHIELE, Bernt. (2018). *Proceedings of 15th European Conference on Computer Vision (ECCV 2018), Munich, September 8-14*, (pp. 570-586) Munich: Springer.
http://openaccess.thecvf.com/content_ECCV_2018/papers/Qianru_Sun_A_Hybrid_Model_ECCV_2018_paper.pdf (Published)

Natural and effective obfuscation by head inpainting, by SUN, Qianru; MA, Liqian; OH, Seong Joon; VAN GOOL, Luc; SCHIELE, Bernt; FRITZ, Mario. (2018). *2018 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR): Salt Lake City, UT, June 18-22: Proceedings*, (pp. 5050-5059) Los Alamitos, CA: IEEE Computer Society. <https://doi.org/10.1109/CVPR.2018.00530> (Published)

Disentangled person image generation, by MA, Liqian; SUN, Qianru; GEORGOULIS, Stamatis; VAN GOOL, Luc; SCHIELE, Bernt; FRITZ, Mario. (2018). *2018 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR): Salt Lake City, June 18-22: Proceedings*, (pp. 99-108) Los Alamitos, CA: IEEE Computer Society. <https://doi.org/10.1109/CVPR.2018.00018> (Published)

Pose guided person image generation, by MA, Liqian; JIA, Xu; SUN, Qianru; SCHIELE, Bernt; TUYTELAARS, Tinne; VAN GOOL, Luc. (2017). *Advances in Neural Information Processing Systems 31 (NIPS 2017)*, (pp. 406-416) Long Beach, CA:
<http://papers.nips.cc/paper/6644-pose-guided-person-image-generation> (Published)

A domain based approach to social relation recognition, by SUN, Qianru; SCHIELE, Bernt; FRITZ, Mario. (2017). *2017 IEEE Conference on Computer Vision and Pattern Recognition (CVPR): Honolulu, HI, July 21-26: Proceedings*, (pp. 3481-3490) Los Alamitos, CA: IEEE Computer Society.
<https://doi.org/10.1109/CVPR.2017.54> (Published)

Human action classification based on sequential bag-of-words model, by LIU, Hong; ZHANG, Qiaoduo; SUN, Qianru. (2014). *Proceedings of the 2014 IEEE International Conference on Robotics and Biomimetics (ROBIO 2014), Bali, December 5-10*, (pp. 2280-2285) Bali: <https://doi.org/10.1109/ROBIO.2014.7090677> (Published)

Online learning on incremental distance metric for person re-identification, by SUN, Yuke; LIU, Hong; SUN, Qianru. (2014). *Proceedings of the 2014 IEEE International Conference on Robotics and Biomimetics (ROBIO 2014), Bali, December 5-10*, (pp. 1421-1426) Bali: <https://doi.org/10.1109/ROBIO.2014.7090533> (Published)

Action classification by exploring directional co-occurrence of weighted STIPs, by LIU, Mengyuan; LIU, Hong; SUN, Qianru. (2014). *2014 IEEE International Conference on Image Processing (ICIP 2014), Paris, October 27-30*, (pp. 1460-1464) Paris: IEEE. <https://doi.org/10.1109/ICIP.2014.7025292> (Published)

Learning directional co-occurrence for human action classification, by LIU, Hong; LIU, Mengyuan; SUN, Qianru. (2014). *Proceedings of the 2014 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2014), Florence, May 5-9*, (pp. 1235-1239) Florence:
<https://doi.org/10.1109/ICASSP.2014.6853794> (Published)

Learning spatio-temporal co-occurrence correlograms for efficient human action classification, by SUN, Qianru; LIU, Hong. (2013). *2013 IEEE International Conference on Image Processing (ICIP 2013), Melbourne, September 15-18*, (pp. 1-5) Melbourne: IEEE. <https://doi.org/10.1109/ICIP.2013.6738663> (Published)

Inferring ongoing human activities based on recurrent self-organizing map trajectory, by SUN, Qianru; LIU, Hong. (2013). *Proceedings of the 24th British Machine Vision Conference (BMVC 2013), Bristol, September 9-13*, (pp. 1-11) Bristol: BMVA. <https://doi.org/10.5244/C.27.11> (Published)

Action disambiguation analysis using normalized google-like distance correlogram, by SUN, Qianru; LIU, Hong. (2012). *Proceedings of the 11th Asian Conference on Computer Vision (ACCV 2012), Daejeon, Korea, November 5-9*, (pp. 1-12) Seoul: https://doi.org/10.1007/978-3-642-37431-9_33 (Published)

Research Grants

Singapore Management University

Fast-Adapted Neural Networks for Advanced AI Systems, AME Individual Research Grants/Young Individual Research Grants, Agency for Science, Technology and Research (A*STAR) , PI (Project Level): SUN Qianru, 2020, S\$265,584

Automated Deep Neural Network Initiation by Meta-Learning, Alibaba Innovative Research (AIR) Programme, Alibaba Group , PI (Project Level): SUN Qianru, 2019, S\$121,572

Automated Class-Incremental Learning System via Bilevel Optimization Programs, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): SUN Qianru, 2020, S\$100,000

TEACHING

Teaching Areas

Data Management

Courses Taught

Singapore Management University

Undergraduate Programmes :

Data Management

Introduction to Programming

Postgraduate Professional Programmes :

Empirical Research Project 1

Empirical Research Project 2

Empirical Research Project 3