

**SUN Qianru**

School of Computing and Information Systems  
 Singapore Management University (SMU)  
 80 Stamford Road  
 Singapore 178902

Email: qianrusun@smu.edu.sg

Office Phone: 68261360

**Education**

PhD, Peking University, China, 2016

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

**Academic Appointments**

Assistant Professor of Computer Science, School of Computing and Information Systems, SMU, Apr 2021 - Present

Assistant Professor of Information Systems, School of Computing and Information Systems, SMU, Aug 2019 - Mar 2021

**RESEARCH****Publications**Journal Articles [Refereed]

Learning comprehensive global features in person re-identification: Ensuring discriminativeness of more local regions, by XIA, Jiali; HUANG, Jianqiang; ZHENG, Shibao; ZHOU, Qin; SCHIELE, Bernt; HUA, Xian-Sheng; SUN, Qianru. (2023). *Pattern Recognition*, 134 1-35. <https://doi.org/10.1016/j.patcog.2022.109068> (Advance Online)

Causal Interventional Training for Image Recognition, by QIN, Wei; ZHANG, Hanwang; HONG, Richang; LIM, Ee-Peng; SUN, Qianru. (2023). *IEEE Transactions on Multimedia*, 25 1033-1044. <https://doi.org/10.1109/TMM.2021.3136717> (Published)

Open-set domain adaptation by deconfounding domain gaps, by ZHAO, Xin; WANG, Shengsheng; SUN, Qianru. (2023). *Applied Intelligence*, 53 (7), 1-15. <http://doi.org/10.1007/s10489-022-03805-9> (Published)

Revisiting Local Descriptor for Improved Few-Shot Classification, by HE, Jun; HONG, Richang; LIU, Xueliang; XU, Mingliang; SUN, Qianru. (2022). *ACM Transactions on Multimedia Computing, Communications and Applications*, 18 (2), 1-23. <https://doi.org/10.1145/3511917> (Published)

Generating music with emotions, by BAO, Chunhui; SUN, Qianru. (2022). *IEEE Transactions on Multimedia*, 1-14. <http://doi.org/10.1109/TMM.2022.3163543> (Published)

Learning to teach and learn for semi-supervised few-shot image classification, by LI, Xinzhe; HUANG, Jianqiang; LIU, Yaoyao; ZHOU, Qin; ZHENG, Shibao; SCHIELE, Bernt; SUN, Qianru. (2021). *Computer Vision and Image Understanding*, 212 1-10. <https://doi.org/10.1016/j.cviu.2021.103270> (Published)

Generating Face Images With Attributes for Free, by LIU, Yaoyao; SUN, Qianru; HE Xiangnan; LIU An-An; SU Yuting; CHUA Tat-Seng. (2021). *IEEE Transactions on Neural Networks and Learning Systems*, 32 (6), 2733-2743. <https://doi.org/10.1109/TNNLS.2020.3007790> (Published)

Mixed Dish Recognition With Contextual Relation and Domain Alignment, by DENG, Lixi; CHEN, Jingjing; NGO, Chong-Wah; SUN, Qianru; TANG, Sheng; ZHANG, Yongdong; CHUA, Tat-Seng. (2022). *IEEE Transactions on Multimedia*, 24 2034-2045. <https://doi.org/10.1109/TMM.2021.3075037> (Published)

Meta-Transfer Learning Through Hard Tasks, by SUN, Qianru; LIU, Yaoyao; CHEN Zhaozheng; CHUA Tat-Seng; SCHIELE Bernt. (2022). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 44 (3), 1443-1456. <https://doi.org/10.1109/TPAMI.2020.3018506> (Published)

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

Generalized logit adjustment: Calibrating fine-tuned models by removing label bias in foundation models, by ZHU, Beier; TANG, Kaihua; SUN, Qianru; ZHANG, Hanwang. (2023.0). *Proceedings of the 37th Conference on Neural Information Processing Systems (NeurIPS 2023), New Orleans, December 10-16*, (pp. 1-18) New Orleans: NeurIPS . (Published)

Make the U in UDA matter: Invariant consistency learning for unsupervised domain adaptation, by YUE, Zhongqi; SUN, Qianru; ZHANG, Hanwang. (2023.0). *Proceedings of the 37th Conference on Neural Information Processing Systems (NeurIPS 2023), New Orleans, December 10-16*, (pp. 1-20) New Orleans: NeurIPS . (Published)

Invariant training 2D-3D joint hard samples for few-shot point cloud recognition, by YI, Xuanyu; DENG, Jiajun; SUN, Qianru; HUA, Xian-Sheng; LIM, Joo-Hwee; ZHANG, Hanwang. (2023.0). *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV), Paris, France, October 2-6*, (pp. 14463-14474) Piscataway, NJ: IEEE. (Published)

Semantic scene completion with cleaner self, by WANG, Fengyun; ZHANG, Dong; ZHANG, Hanwang; TANG, Jinhui; SUN, Qianru. (2023.0). *Proceedings of the 2023 Conference on Computer Vision and Pattern Recognition, Vancouver, Canada, 2023 June 18-22*, (pp. 867-877) Vancouver: CVPR. <https://doi.org/10.48550/arXiv.2303.09977> (Published)

Freestyle layout-to-image synthesis, by XUE, Han; HUANG, Zhiwu; SUN, Qianru; SONG, Li; ZHANG, Wenjun. (2023.0). *Proceedings of the 2023 Conference on Computer Vision and Pattern Recognition, Vancouver, Canada, 2023 June 18-22*, (pp. 14256-14266) Vancouver: CVPR. (Published)

Extracting class activation maps from non-discriminative features as well, by CHEN, Zhaozheng; SUN, Qianru. (2023.0). *Proceedings of the 2023 Conference on Computer Vision and Pattern Recognition, Vancouver, Canada, 2023 June 18-22*, (pp. 3135-3144) Vancouver: CVPR. (Published)

Class-incremental exemplar compression for class-incremental learning, by LUO, Zilin; LIU, Yaoyao;

SCHIELE, Bernt; SUN, Qianru. (2023.0). *Proceedings of the 2023 Conference on Computer Vision and Pattern Recognition, Vancouver, Canada, 2023 June 18-22*, (pp. 11371-11380) Vancouver: CVPR. (Published)

Unbiased multiple instance learning for weakly supervised video anomaly detection, by LV, Hui; YUE, Zhongqi; SUN, Qianru; LUO, Bin; CUI, Zhen; ZHANG, Hanwang. (2023.0). *Proceedings of the 2023 Conference on Computer Vision and Pattern Recognition, Vancouver, Canada, 2023 June 18-22*, (pp. 8022-8031) Vancouver: CVPR. (Published)

Compositional prompt tuning with motion cues for open-vocabulary video relation detection, by GAO, Kaifeng; CHEN, Long; ZHANG, Hanwang; XIAO, Jun; SUN, Qianru. (2023.0). *Proceedings of the eleventh International Conference on Learning Representations, Kigali, Rwanda, 2023 May 1-5*, (pp. 1-16) Kigali, Rwanda: ICLR. (Published)

Online hyperparameter optimization for class-incremental learning, by LIU, Yaoyao; LI, Yingying; SCHIELE, Bernt; SUN, Qianru. (2023.0). *Proceedings of the Thirty-Seventh AAAI Conference on Artificial Intelligence, Washington, DC, 2023 February 7-14*, (pp. 1-9) Washington, USA: AAAI. (Published)

Interventional training for out-of-distribution natural language understanding, by YU, Sicheng; JIANG, Jing; ZHANG, Hao; NIU, Yulei; SUN, Qianru; BING, Lidong. (2022.0). *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing EMNLP: Abu Dhabi, December 7-11*, (pp. 11627-11638) Abu Dhabi: ACL. (Published)

Class is invariant to context and vice versa: On learning invariance for out-of-distribution generalization, by QI, Jiaxin; TANG, Kaihua; SUN, Qianru; HUA, Xian-Sheng; ZHANG, Hanwang. (2022.0). *Computer Vision ECCV 2022: 17th European Conference, Tel Aviv, Israel, October 23-27: Proceedings*, (pp. 92-109) Cham: Springer. [https://doi.org/10.1007/978-3-031-19806-9\\_6](https://doi.org/10.1007/978-3-031-19806-9_6) (Published)

On mitigating hard clusters for face clustering, by CHEN, Yingjie; ZHONG, Huasong; CHEN, Chong; SHEN, Chen; HUANG, Jianqiang; WANG, Tao; LIANG, Yun; SUN, Qianru. (2022.0). *Computer Vision: ECCV 2022: 17th European Conference, Tel Aviv, Israel, October 23-27: Proceedings*, (pp. 529-544) Cham: Springer. [https://doi.org/10.1007/978-3-031-19775-8\\_31](https://doi.org/10.1007/978-3-031-19775-8_31) (Published)

Equivariance and invariance inductive bias for learning from insufficient data, by WANG, Tan; SUN, Qianru; PRANATA, Sugiri; JAYASHREE, Karlekar; ZHANG, Hanwang. (2022.0). *Computer Vision ECCV 2022: 17th European Conference, Tel Aviv, Israel, October 23-27: Proceedings*, (pp. 241-258) Cham: Springer. [https://doi.org/10.1007/978-3-031-20083-0\\_15](https://doi.org/10.1007/978-3-031-20083-0_15) (Published)

Class re-activation maps for weakly-supervised semantic segmentation, by CHEN, Zhaozheng; WANG, Tan; WU, Xiongwei; HUA, Xian-Sheng; ZHANG, Hanwang; SUN, Qianru. (2022.0). *Proceedings of the 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition, New Orleans, LA, USA, June 18-24*, (pp. 969-978) New Orleans, Louisiana: IEEE. <http://doi.org/10.1109/CVPR52688.2022.00104> (Published)

Translate-train embracing translationese artifacts, by YU, Sicheng; SUN, Qianru; ZHANG, Hao; JIANG, Jing. (2022.0). *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics, Dublin, Ireland, 2022 May 22-27*, (pp. 362-370) Dublin, Ireland: Association for Computational Linguistics. <http://doi.org/10.18653/v1/2022.acl-short.40> (Published)

Deconfounded visual grounding, by HUANG, Jianqiang; QIN, Yu; QI, Jiaxin; SUN, Qianru; ZHANG, Hanwang. (2022.0). *Proceedings of the 36th AAAI Conference on Artificial Intelligence, Virtual Conference, 2022 February 2 - March 1*, (pp. 998-1006) Virtual Conference: AAAI. <http://doi.org/10.1609/aaai.v36i1.19983> (Published)

Self-supervised learning disentangled group representation as feature, by WANG, Tan; YUE, Zhongqi; HUANG, Jianqiang; SUN, Qianru; ZHANG, Hanwang. (2021.0). *Proceedings of the 35th Conference on Neural Information Processing Systems, Sydney, Australia, 2021 December 6-14*, (pp. 1-8) Virtual Conference: (Published)

RMM: Reinforced memory management for class-incremental learning, by LIU, Yaoyao; SCHIELE, Bernt; SUN, Qianru. (2021.0). *Proceedings of the 35th Conference on Neural Information Processing Systems, Virtual Conference, 2021 December 6-14*, (pp. 1-13) Virtual Conference: (Published)

A large-scale benchmark for food image segmentation, by WU, Xiongwei; FU, Xin; LIU, Ying; LIM, Ee-Peng; HOI, Steven C. H.; SUN, Qianru. (2021.0). *MM '21: Proceedings of the 29th ACM International Conference on Multimedia, Virtual, October 20-24*, (pp. 506-515) New York: ACM. <https://doi.org/10.1145/3474085.3475201> (Published)

- Causal attention for unbiased visual recognition, by WANG, Tan; ZHOU, Chang; SUN, Qianru; ZHANG, Hanwang. (2021.0). *Proceedings of 2021 International Conference on Computer Vision, Virtual Conference, October 11-17*, (pp. 3091-3100) Virtual Conference: (Published)
- Self-regulation for semantic segmentation, by ZHANG, Dong; ZHANG, Hanwang; TANG, Jinhui; HUA, Xian-Sheng; SUN, Qianru. (2021.0). *Proceedings of 2021 International Conference on Computer Vision, Virtual Conference, October 11-17*, (pp. 6953-6963) Virtual Conference: (Published)
- Transporting causal mechanisms for unsupervised domain adaptation, by YUE, Zhongqi; SUN, Qianru; HUA, Xian-Sheng; ZHANG, Hanwang. (2021.0). *Proceedings of 2021 International Conference on Computer Vision, Virtual Conference, October 11-17*, (pp. 1-16) Virtual Conference: (Published)
- COSY: COUNTERFACTUAL SYNTAX for cross-lingual understanding, by YU, Sicheng; ZHANG, Hao; NIU, Yulei; SUN, Qianru; JIANG, Jing. (2021.0). *ACL-IJCNLP 2021: Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics, August 1-6*, (pp. 577-589) Online: Association for Computational Linguistics. <https://doi.org/10.18653/v1/2021.acl-long.48> (Published)
- Counterfactual zero-shot and open-set visual recognition, by YUE, Zhongqi; WANG, Tan; SUN, Qianru; HUA, Xian-Sheng; ZHANG, Hanwang. (2021.0). *2021 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR): Virtual, June 20-25: Proceedings*, (pp. 15399-15409) Los Alamitos, CA: IEEE Computer Society. <https://doi.org/10.1109/CVPR46437.2021.01515> (Published)
- Adaptive aggregation networks for class-incremental learning, by LIU, Yaoyao; SCHIELE, Bernt; SUN, Qianru. (2021.0). *2021 IEEE/CVF Conference on Computer Vision and Pattern Recognition: Virtual, June 21-24: Proceedings*, (pp. 2544-2553) Piscataway, NJ: IEEE. <https://doi.org/10.1109/CVPR46437.2021.00257> (Published)
- Causal intervention for weakly-supervised semantic segmentation, by ZHANG Dong; ZHANG, Hanwang; TANG, Jinhui; HUA, Xian-Sheng; SUN, Qianru. (2020.0). *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. (2020.0). *Advances in Neural Information Processing Systems: Proceedings of the 34th Conference NeurIPS 2020, Vancouver, Canada, December 6-12, Virtual*, (pp. 1-23) Cambridge, MA: MIT. (Published)
- An ensemble of epoch-wise empirical Bayes for few-shot learning, by LIU, Yaoyao; SCHIELE, Bernt; SUN, Qianru. (2020.0). *Computer Vision - ECCV 2020: 16th European Conference, Glasgow, August 23-28: Proceedings*, (pp. 404-421) Cham: Springer. [https://doi.org/10.1007/978-3-030-58517-4\\_24](https://doi.org/10.1007/978-3-030-58517-4_24) (Published)
- Feature pyramid transformer, by ZHANG, Dong; ZHANG, Hanwang; TANG, Jinhui; WANG, Meng; HUA, Xian-Sheng; SUN, Qianru. (2020.0). *Proceedings of the 16th European Conference on Computer Vision, ECCV 2020, Virtual, August 23-28*, (pp. 323-339) Glasgow, UK: Springer. (Published)
- Mnemonics training: Multi-class incremental learning without forgetting, by LIU, Yaoyao; SU, Yuting; LIU, An-An; SCHIELE, Bernt; SUN, Qianru. (2020.0). *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](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. (2020.0). *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. (2020.0). *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. (2020.0). *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. (2019.0). *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. (2019.0). *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. (2019.0). *2019 IEEE International Conference on Image Processing (ICIP): Taipei, September 22-25*, (pp. 2786-2790) Piscataway, NJ: 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. (2019.0). *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. (2019.0). *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. (2018.0). *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](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. (2018.0). *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, Stamatios; VAN GOOL, Luc; SCHIELE, Bernt; FRITZ, Mario. (2018.0). *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. (2017.0). *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. (2017.0). *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)
- Online learning on incremental distance metric for person re-identification, by SUN, Yuke; LIU, Hong; SUN, Qianru. (2014.0). *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)
- Human action classification based on sequential bag-of-words model, by LIU, Hong; ZHANG, Qiaoduo; SUN, Qianru. (2014.0). *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)
- Action classification by exploring directional co-occurrence of weighted STIPs, by LIU, Mengyuan; LIU, Hong; SUN, Qianru. (2014.0). *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. (2014.0). *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. (2013.0). *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. (2013.0). *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. (2012.0). *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](https://doi.org/10.1007/978-3-642-37431-9_33) (Published)

## Research Grants

### Singapore Management University

Weakly-supervised Semantic Segmentation and Its Applications in SAR Images, DSO National Laboratories , PI (Project Level): SUN Qianru, 2022, S\$343,999.5

Task-Specific Data Augmentation in Class-Incremental Learning Systems, Alibaba Innovative Research (AIR) Programme, Alibaba DAMO Academy (Hangzhou) Technology Co., Ltd , PI (Project Level): SUN Qianru, 2021, S\$119,302

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

### Other Institutions

Transition from Living Analytics Research Centre to Social Urban Observatory, Strategic Capabilities Research Centres Funding Initiative, NRF PI (Project Level): LIM Ee Peng, Co-PI (Project Level): ZHENG Baihua, Archan MISRA, Jing JIANG, Wei GAO, SUN Qianru, HARA, Kotaro, Palakorn ACHANANUPARP, 2021, SGD2,687,280

Transition from Living Analytics Research Centre to Social Urban Observatory, NRF, National Research Foundation - Strategic Capabilities Research Centres Funding Initiative , PI (Programme Level): LIM Ee Peng, PI (Project Level): LIM Ee Peng, Archan MISRA, Jing JIANG, ZHENG Baihua, Co-PI (Project Level): HARA, Kotaro, SUN Qianru, Palakorn ACHANANUPARP, Wei GAO, 2021, SGD2,687,280

## TEACHING

---

### Teaching Areas

Data Management

## **Courses Taught**

### Singapore Management University

#### Undergraduate Programmes :

Data Management

Introduction to Programming

#### Postgraduate Professional Programmes :

Capstone Project - Data Science and Engineering

Introduction to Artificial Intelligence

#### Postgraduate Research Programmes :

Deep Learning and Vision

Empirical Research Project 1

Empirical Research Project 2

Empirical Research Project 3