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Summary

- I am now an Associate Professor at the College of Software, Beihang University

Research Interests

Deep learning driven 3D computer vision, and image/video processing.

Experience

2019–current **Associate Professor**, *College of Software, Beihang University*, Beijing, China.

2016–2019 **Postdoctoral Researcher**, *Image and Video Processing Laboratory, Department of Electronic Engineering, The Chinese University of Hong Kong*, Hong Kong, China.

- Topic: Deep Learning Driven Low-level and Middle-level Computer Vision
- Supervisor: Prof. Xiaogang Wang

2015–2016 **Visiting Research Assistant**, *BeingThere Centre, Institute for Media Innovation, Nanyang Technological University*, Singapore.

- Topic: Real-time Depth-based Unconstrained Facial Pose and Expression Tracking in the Wild
- Supervisor: Prof. Jianfei Cai

Education

2011–2016 **Mphil-Ph.D Degree**, *Image and Video Processing Laboratory, Department of Electronic Engineering, the Chinese University of Hong Kong*, Hong Kong, China.

- Topic: RGB-D Video Processing – Enhancement and Applications
- Supervisor: Prof. King Ngi Ngan

2007–2011 **B.E. Degree**, *Department of Information Science and Electronic Engineering, Zhejiang University*, Hangzhou, China.

Publications

* indicates equal contributions

\# indicates the corresponding author

Journals

[J-9] R. Su, D. Xu, **L. Sheng**, Wanli Ouyang, "PCG-TAL: Progressive Cross-granularity Cooperation for Temporal Action Localization", *to appear in IEEE Transactions on Image Processing* (**TIP**), 2020.

[J-8] C. H. Cheung, **L. Sheng**, K. N. Ngan, "Motion Compensated Virtual View Synthesis Using Novel Particle Cell", *to appear in IEEE Transactions on Multimedia* (**TMM**), 2020.

[J-7] **L. Sheng***, J. Pan*, J. Guo, J. Shao, C.-C. Loy, "High-quality Video Generation from Static Structural Annotations", *in International Journal of Computer Vision* (**IJCV**), vol.128, pp.2552-2569, May 2020.

[J-6] **L. Sheng**, J. Cai, T-J. Cham, V. Pavlovic, K. N. Ngan, "Visibility-constrained Generative Model for Robust 3D Facial Pose Tracking", *in IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), vol.41, no.8, pp.1994-2007, Aug. 2019.

[J-5] F. Wu, S. Li, T. Zhao, K. N. Ngan, **L. Sheng**, "Cascaded Regression using Landmark Displacement for 3D Face Reconstruction", *in Pattern Recognition Letters* (**PRL**), vol.125, pp.766-772, 2019.

[J-4] B. Dong, **L. Sheng**, "Bags of Tricks for Learning Depth and Camera Motion from Monocular Videos", *Virtual Reality & Intelligent Hardware* (**VRIH**), vol.1, no.5, pp.500-510, 2019.

[J-3] C. H. Cheung, K. N. Ngan, **L. Sheng**, "Spatio-Temporal Disocclusion Filling Using Novel Sprite Cells", *in IEEE Transactions on Multimedia* (**TMM**), vol.20, no.6, pp.1376-1391, Nov. 2017.

[J-2] S. Li, K. N. Ngan, R. Paramesran and **L. Sheng**, "Real-time Head Pose Tracking with Online Face Template Reconstruction", *in IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), vol.38, no.9, pp.1922-1928, Sept. 2016.

[J-1] **L. Sheng**, K. N. Ngan, C-L. Lim and S. Li, "Online Temporally Consistent Indoor Depth Video Enhancement via Static Structure", *in IEEE Transactions on Image Processing* (**TIP**), vol.24, no.7, pp.2197-2211, July 2015.

Conferences

[C-24] Y. Yang, **L. Sheng**#, X. Jiang, H. Wang, D. Xu, X. Cao, "IncreACO: Incrementally Learned Automatic Check-out with Photorealistic Exemplar Augmentation", *in Winter Conference on Applications of Computer Vision* (**WACV**), 2021.

[C-23] Y. Qian, G. Yin, **L. Sheng**#, Z. Chen, Jing Shao, "Thinking in Frequency: Face Forgery Detection by Mining Frequency-Aware Clues", *in European Conference on Computer Vision* (**ECCV**), 2020.

[C-22] R. Guo, C. Lin, C. Li, K. Tian, M. Sun, **L. Sheng**#, J. Yan, "Powering One-Shot Topological NAS with Stabilized Share-Parameter Proxy", *in European Conference on Computer Vision* (**ECCV**), 2020.

[C-21] M. Liu, **L. Sheng**, S. Yang, J. Shao, S.-M. Hu, "Morphing and Sampling Network for Dense Point Cloud Completion", *in AAAI Conference on Artificial Intelligence* (**AAAI**), 2020.

[C-20] **L. Sheng**, D. Xu, W. Ouyang, X. Wang, "Unsupervised Collaborative Learning of Keyframe Detection and Visual Odometry towards Monocular Deep SLAM", *in IEEE International Conference in Computer Vision* (**ICCV**), 2019.

[C-19] C. Tang, **L. Sheng**, Z.-X. Zhang, X. Hu, "Improving Pedestrian Attribute Recognition with Weakly-Supervised Multi-scale Attribute-Specific Localization", *in IEEE International Conference in Computer Vision* (**ICCV**), 2019.

[C-18] Z. Wang, X. Liu, H. Li, **L. Sheng**, J. Yan, X. Wang, J. Shao, "CAMP: Cross-modal Adaptive Message Passing for Text-image Retrieval", *in IEEE International Conference in Computer Vision* (**ICCV**), 2019.

[C-17] G. Yin, B. Liu, **L. Sheng**#, N. Yu, X. Wang, J. Shao, "Semantics Disentangling for Text-to-Image Generation", *in IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), **Oral Presentation**, 2019.

[C-16] G. Yin, **L. Sheng**, B. Liu, N. Yu, X. Wang, J. Shao, "Context and Attribute Grounded Dense Captioning", *in IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2019.

[C-15] J. Pan, C. Wang, X. Jia, J. Shao, **L. Sheng**#, J. Yan, X. Wang, "Video Generation from Single Semantic Label Map", *in IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2019.

[C-14] B. Li, W. Ouyang, **L. Sheng**, X. Zeng, X. Wang, "GS3D: An Efficient 3D Object Detection Framework for Autonomous Driving", *in IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2019.

[C-13] Y. Liu, **L. Sheng**, J. Shao, J. Yan, S. Xiang, C. Pan, "Multi-Label Image Classification via Knowledge Distillation from Weakly-Supervised Detection", *in ACM Multimedia* (**ACM MM**), 2018.

[C-12] G. Yin, **L. Sheng**, B. Liu, N. Yu, X. Wang, J. Shao, C-C. Loy, "Zoom-Net: Mining Deep Feature Interactions for Visual Relationship Recognition", *in European Conference on Computer Vision* (**ECCV**), 2018.

[C-11] **L. Sheng**, Z. Lin, J. Shao, X. Wang, "Avatar-Net: Multi-scale Zero-shot Style Transfer by Feature Decoration", *in IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2018.

[C-10] Y. Liu*, F. Wei*, J. Shao*, **L. Sheng**, J. Yan, X. Wang, "Exploring Disentangled Feature Representation Beyond Face Identification", *in IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2018.

[C-9] S. Sun, Z. Kuang, **L. Sheng**, W. Ouyang, W. Zhang, "Optical Flow Guided Feature: A Fast and Robust Motion Representation for Video Action Recognition", *in IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2018.

[C-8] X. Liu, H. Zhao, M. Tian, **L. Sheng**, J. Shao, S. Yi, J. Yan, X. Wang, "HydraPlus-Net: Attentive Deep Features For Pedestrain Analysis", *in IEEE International Conference on Computer Vision* (**ICCV**), 2017.

[C-7] **L. Sheng**, J. Cai, T-J. Cham, V. Pavlovic, K. N. Ngan, "A Generative Model for Depth-based Robust 3D Facial Pose Tracking", *in IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2017.

[C-6] C. H. Cheung, **L. Sheng** and K. N. Ngan, "A disocclusion filling method using multiple sprites with depth for virtual view synthesis", *in IEEE International Conference on Multimedia and Expo Workshop* (**ICMEW**), 2015.

[C-5] **L. Sheng**, K. N. Ngan and T-W. Hui, "Accelerating the Distribution Estimation for the Weighted Median/Mode Filters", *in Asian Conference on Computer Vision* (**ACCV**), 2014.

[C-4] **L. Sheng**, K. N. Ngan and S. Li, "Temporal Depth Video Enhancement Based On Intrinsic Static Structure", *in IEEE International Conference on Image Processing* (**ICIP**), **Oral Presentation**, 2014.

[C-3] S. Li, K. N. Ngan and **L. Sheng**, "Screen-camera Calibration Using a Thread", *in IEEE International Conference On Image Processing* (**ICIP**), 2014.

[C-2] **L. Sheng**, K. N. Ngan and S. Li, "Depth Enhancement Based On Hybrid Geometric Hole Filling Strategy", *in IEEE International Conference on Image Processing* (**ICIP**), 2013.

[C-1] S. Li, K. N. Ngan and **L. Sheng**, "A Head Pose Tracking System Using RGB-D Camera", *International Conference on Computer Vision Systems* (**ICVS**), **Oral Presentation**, 2013.

Grants, Honors and Awards

2020-2022 **Research Grants**, *Deeply Learned Visual Correspondence in Unconstrained Scenes*, National Natural Science Foundation of China.

2020-2022 **Research Grants**, *Generalizable Learning and Computational Engine for Domain Knowledge*, Science, Technology and Innovation towards 2030 – Major Program on "Next Generation of Artificial Intelligence".

Professional Services

- Journal reviewer of
  - IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)
  - IEEE Transactions on Image Processing (T-IP)
  - IEEE Transactions on Multimedia (T-MM)
  - IEEE Transactions on Circuits and Systems for Video Technology (T-CSVT)
  - and etc.
- Senior Program Commitee (SPC) of
  - International Joint Conference on Artificial Intelligence (IJCAI)
- Conference reviewer of
  - IEEE International Conference on Computer Vision (ICCV)
  - IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
  - European Conference on Computer Vision (ECCV)
  - International Conference of Machine Learning (ICML)
  - AAAI Conference on Artificial Intelligence (AAAI)
  - Neural Information Processing Systems (NeurIPS)
  - and etc.
- Member (S'13 – M'16), IEEE
- Member (S'13 – M'16), Signal Processing Society (SPS), IEEE
- Member, Computer Vision Foundation (CVF)
- Member, Association for Advancement of Artificial Intelligence (AAAI)
- Member, China Computer Federation (CCF)