**HE Shengfeng**

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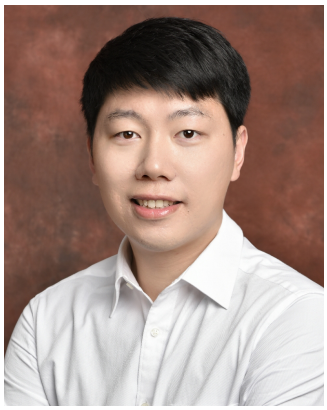

## Education

PhD, City University of Hong Kong, China, 2015

Master of Science, Macau University of Science & Technology, China, 2011

Bachelor of Science, Macau University of Science & Technology, China, 2009

Visiting PhD, Georgia Institute of Technology, United States of America, 2015

## Academic Appointments

Associate Professor of Computer Science, School of Computing and Information Systems, SMU, Feb 2023 - Present

Associate Professor, School of Computer Science and Engineering, South China University of Technology, China, Nov 2016 - Jan 2023

Research Fellow, Department of Computer Science, City University of Hong Kong, China, Sep 2015 - Oct 2016

Research Assistant, Department of Computer Science, City University of Hong Kong, China, Oct 2011 - Oct 2012

## Awards and Honors

World's Top 2% Scientists, Stanford University, 2024, 2023

PerCom Mark Weiser Best Paper Award, PerCom, 2024

Google South Asia & Southeast Asia Research Award, Google, 2024

Lee Kong Chian Fellowships, Singapore Management University, 2024

Undergraduate Teaching Excellence Award, South China University of Technology, 2022, 2021, 2020, 2019, 2018, 2017

Guangdong Distinguished Young Scholars, Guangdong Natural Science Funds, 2022

CCF-Tencent Open Research Fund Honorable Mention (8/200), China Computer Federation, 2022

CCF-Tencent Open Research Fund Outstanding Patent Award (1/200), China Computer Federation, 2020

CCF-Tencent Open Research Fund Excellence Award (1/200), China Computer Federation, 2020

Excellence Supervisor Award for Undergraduate Dissertation, South China University of Technology, 2019, 2018

ACM Rising Star Guangzhou Chapter, ACM, 2018

Outstanding Reviewer, IEEE Trans. on Multimedia, 2018

Outstanding Reviewer, The British Machine Vision Conference, 2017

Guangdong Young Top-notch Talent, Department of Science and Technology of Guangdong Province, 2017

**Professional Memberships**

Senior Member, Institute of Electrical and Electronics Engineers (IEEE), 2020

Distinguished Member, China Computer Federation (CCF), 2020

Member, Association for Computing Machinery (ACM), 2018

## RESEARCH

### Publications

Journal Articles [Refereed]

Learning nighttime semantic segmentation the hard way, by LIU, Wenxi; CAI, Jiaxin; LI, Qi; LIAO, Chenyang; CAO, Jingjing; HE, Shengfeng; YU, Yuanlong. (2024). *ACM Transactions on Multimedia Computing, Communications and Applications, 20* (7), 1-23. (Published)

3D snapshot: Invertible embedding of 3D neural representations in a single image, by LU, Yuqin; DENG, Bailin; ZHONG, Zhixuan; ZHANG, Tianle; QUAN, Yuhui; CAI, Hongmin; HE, Shengfeng. (2024). *IEEE Transactions on Pattern Analysis and Machine Intelligence, 46* (12), 11524-11531. https://doi.org/10.1109/TPAMI.2024.3411051 (Published)

Triadic temporal-semantic alignment for weakly-supervised video moment retrieval, by LIU, Jin; XIE, JiaLong; ZHOU, Fengyu; HE, Shengfeng. (2024). *Pattern Recognition, 156* 1-11. https://doi.org/10.1016/j.patcog.2024.110819 (Published)

Ultra-high resolution image segmentation via locality-aware context fusion and alternating local enhancement, by LIU, Wenxi; LI, Qi; LIN, Xindai; YANG, Weixiang; HE, Shengfeng; YU, Yuanlong . (2024). *International Journal of Computer Vision, 132* (11), 5030-5047. https://doi.org/10.1007/s11263-024-02045-3 (Published)

Granular3D: Delving into multi-granularity 3D scene graph prediction, by HUANG, Kaixiang; YANG, Jingru; WANG, Jin; HE, Shengfeng; WANG, Zhan; HE, Haiyan; ZHANG, Qifeng; LU, Guodong. (2024). *Pattern Recognition, 153* 1-12. https://doi.org/10.1016/j.patcog.2024.110562 (Published)

Unifying global-local representations in salient object detection with transformers, by REN, Sucheng; ZHAO, Nanxuan; WEN, Qiang; HAN, Guoqiang; HE, Shengfeng. (2024). *IEEE Transactions on Emerging Topics in Computational Intelligence, 8* (4), 2870-2879. https://doi.org/10.1109/TETCI.2024.3380442 (Published)

Modality-aware discriminative fusion network for integrated analysis of brain imaging genomics, by SHENG, Xiaoqi; CAI, Hongmin; NIE, Yongwei; HE, Shengfeng; CHEUNG, Yiu-Ming; CHEN, Jiazhou. (2024). *IEEE Transactions on Neural Networks and Learning Systems,* https://doi.org/10.1109/TNNLS.2024.3439530 (Advance Online)

G2Face: High-fidelity reversible face anonymization via generative and geometric priors, by YANG, Haoxin; XU, Xuemiao; XU, Cheng; ZHANG, Huaidong; QIN, Jing; WANG, Yi; HENG, Pheng-Ann; HE, Shengfeng. (2024). *IEEE Transactions on Information Forensics and Security, 19* 8773-8785. https://doi.org/10.1109/TIFS.2024.3449104 (Published)

Hierarchical damage correlations for old photo restoration, by CAI, Weiwei; XU, Xuemiao; XU, Jiajia; ZHANG, Huaidong; YANG, Haoxin; ZHANG, Kun; HE, Shengfeng. (2024). *Information Fusion: An International Journal on Multi-Sensor, Multi-Source Information Fusion, 107* 1-11. https://doi.org/10.1016/j.inffus.2024.102340 (Published)

Question type-aware debiasing for test-time visual question answering model adaptation, by LIU, Jin; XIE, Jialong; ZHOU, Fengyu; HE, Shengfeng. (2024). *IEEE Transactions on Circuits and Systems for Video Technology, 34* (11), 10805-10816. https://doi.org/10.1109/TCSVT.2024.3410041 (Published)

DreamAnime: Learning style-identity textual disentanglement for anime and beyond, by XU, Chenshu; XU, Yangyang; ZHANG, Huaidong; XU, Xuemiao; HE, Shengfeng. (2024). *IEEE Transactions on Visualization and Computer Graphics,* 1-12. https://doi.org/10.1109/TVCG.2024.3397712 (Advance Online)

TranSiam: Aggregating multi-modal visual features with locality for medical image segmentation, by LI, Xuejian; MA, Shiqiang; XU, Junhai; TANG, Jijun; HE, Shengfeng; GUO, Fei. (2024). *Expert Systems with Applications, 237* 1-11. https://doi.org/10.1016/j.eswa.2023.121574 (Published)

Monocular BEV perception of road scenes via front-to-top view projection, by LIU, Wenxi; LI, Qi; YANG, Weixiang; CAI, Jiaxin; YU, Yuanhong; MA, Yuexin; HE, Shengfeng; PAN, Jia. (2024). *IEEE Transactions on Pattern Analysis and Machine Intelligence, 46* (9), 1-17. https://doi.org/10.1109/TPAMI.2024.3377812 (Advance Online)

Identity-aware variational autoencoder for face swapping, by LI, Zonglin; ZHANG, Zhaoxin; HE, Shengfeng; MENG, Quanling; ZHANG, Shengping; ZHONG, Bineng; JI, Rongrong. (2024). *IEEE Transactions on Circuits and Systems for Video Technology, 34* (7), https://doi.org/10.1109/TCSVT.2024.3349909 (Published)

Delving into important samples of semi-supervised old photo restoration: A new dataset and method, by CAI, Werwei; ZHANG, Huaidong; XU, Xuemiao; XU, Chenshu; ZHANG, Kun; HE, Shengfeng. (2024). *IEEE Transactions on Multimedia, 26* 1-13. https://doi.org/10.1109/TMM.2024.3400695 (Advance Online)

Learning an interpretable stylized subspace for 3D-aware animatable artforms, by ZHENG, Chenxi; LIU, Bangzhen; XU, Xuemiao; ZHANG, Huaidong; HE, Shengfeng. (2024). *IEEE Transactions on Visualization and Computer Graphics,* 1-13. https://doi.org/10.1109/TVCG.2024.3364162 (Advance Online)

Delving into multi-illumination monocular depth estimation: A new dataset and method, by LIANG, Yuan; ZHANG, Zitian; XIAN, Chuhua; HE, Shengfeng. (2024). *IEEE Transactions on Multimedia,* 1-15. https://doi.org/10.1109/TMM.2024.3353544 (Published)

DR-FER: Discriminative and Robust Representation Learning for Facial Expression Recognition, by LI, Ming; FU, Huazhu; HE, Shengfeng; FAN, Hehe; LIU, Jun; KEPPO, Jussi; SHOU, Mike Zheng. (2023). *IEEE Transactions on Multimedia, 26* 1-14. https://doi.org/10.1109/TMM.2023.3347849 (Advance Online)

Monocular depth estimation for glass walls with context: A new dataset and method, by LIANG, Yuan; DENG, Bailin; LIU, Wenxi; QIN, Jing; HE, Shengfeng . (2023). *IEEE Transactions on Pattern Analysis and Machine Intelligence, 45* (12), 15081-15097. https://doi.org/10.1109/TPAMI.2023.3308551 (Published)

Edge Distraction-aware Salient Object Detection, by REN, Sucheng; LIU, Wenxi; JIAO, Jianbo; HAN, Guoqiang; HE, Shengfeng. (2023). *IEEE MultiMedia, 30* (3), 63-73. https://doi.org/10.1109/MMUL.2023.3235936 (Published)

Single-View View Synthesis with Self-rectified Pseudo-Stereo, by ZHOU, Yang; WU, Hanjie; LIU, Wenxi; XIONG, Zheng; QIN, Jing; HE, Shengfeng. (2023). *International Journal of Computer Vision, 131* (8), 2032-2043. https://doi.org/10.1007/s11263-023-01803-z (Published)

Reducing Spatial Labeling Redundancy for Active Semi-Supervised Crowd Counting, by LIU, Yongtuo; REN, Sucheng; CHAI, Liangyu; WU, Hanjie; XU, Dan; QIN, Jing; HE, Shengfeng. (2023). *IEEE Transactions on Pattern Analysis and Machine Intelligence, 45* (7), 9248-9255. https://doi.org/10.1109/TPAMI.2022.3232712 (Published)

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Reference-based Screentone Transfer via Pattern Correspondence and Regularization, by LI, Zhansheng; ZHAO, Nanxuan; WU, Zongwei; DAI, Yihua; WANG, Junle; JING, Yanqing; HE, Shengfeng. (2023). *Computer Graphics Forum, 42* (6), https://doi.org/10.1111/cgf.14800 (Published)

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DSDNet: Toward single image deraining with self-paced curricular dual stimulations, by DU, Yong; DENG, Junjie; ZHENG, Yulong; DONG, Junyu; HE, Shengfeng. (2023). *Computer Vision and Image Understanding, 230* 1-19. https://doi.org/10.1016/j.cviu.2023.103657 (Published)

Contextual-Assisted Scratched Photo Restoration, by CAI, Weiwei; ZHANG, Huaidong; XU, Xuemiao; HE, Shengfeng; ZHANG, Kun; QIN, Jing. (2023). *IEEE Transactions on Circuits and Systems for Video Technology, 33* (10), 5458-5469. https://doi.org/10.1109/TCSVT.2023.3256372 (Published)

Pose- and Attribute-consistent Person Image Synthesis, by XU, Cheng; CHEN, Zejun; MAI, Jiajie; XU, Xuemiao; HE, Shengfeng. (2023). *ACM Transactions on Multimedia Computing, Communications and Applications, 19* (2), 1-21. https://doi.org/10.1145/3554739 (Published)

Learning invariant and uniformly distributed feature space for multi-view generation?, by LU, Yuqin; CAO, Jiangzhong; HE, Shengfeng; GUO, Jiangtao; ZHOU, Qiliang; DAI, Qingyun. (2023). *Information Fusion: An International Journal on Multi-Sensor, Multi-Source Information Fusion, 93* 383-395. https://doi.org/10.1016/j.inffus.2023.01.011 (Published)

Appearance-preserved portrait-to-anime translation via proxy-guided domain adaptation, by XIAO, Wenpeng; XU, Cheng; MAI, Jiajie; XU, Xuemiao; LI, Yue; LI, Chengze; LIU, Xueting; HE, Shengfeng . (2022). *IEEE Transactions on Visualization and Computer Graphics, 30* (7), 1-17. https://doi.org/10.1109/TVCG.2022.3228707 (Published)

Make your own sprites: Aliasing-aware and cell-controllable pixelization, by WU, Zongwei; CHAI, Liangyu; ZHAO, Nanxuan; DENG, Bailin; LIU, Yongtuo; WEN, Qiang; WANG, Junle; HE, Shengfeng. (2022). *ACM Transactions on Graphics, 41* (6), 1-16. https://doi.org/10.1145/3550454.3555482 (Published)

Fully Deformable Network for Multiview Face Image Synthesis, by XU, Cheng; LI, Keke; LUO, Xuandi; XU, Xuemiao; HE, Shengfeng; ZHANG, Kun. (2022). *IEEE Transactions on Neural Networks and Learning Systems, 35* (7), https://doi.org/10.1109/TNNLS.2022.3216018 (Published)

Delving deep into pixelized face recovery and defense, by ZHONG, Zhixuan; DU, Yong; ZHOU, Yang; CAO, Jiangzhong; HE, Shengfeng. (2022). *Neurocomputing, 513* 233-246. https://doi.org/10.1016/j.neucom.2022.09.141 (Published)

Efficient Exploration in Crowds by Coupling Navigation Controller and Exploration Planner, by ZHENG, Zhuoqi; HE, Shengfeng; PAN, Jia
. (2022). *IEEE Robotics and Automation Letters, 7* (4), 12126-12133. https://doi.org/10.1109/LRA.2022.3212670 (Published)

Self-Supervised Video Representation Learning by Uncovering Spatio-Temporal Statistics, by WANG, Jiangliu; JIAO, Jianbo; BAO, Linchao; HE, Shengfeng; LIU, Wei; LIU, Yun-hui. (2022). *IEEE Transactions on Pattern Analysis and Machine Intelligence, 44* (7), 3791-3806. https://doi.org/10.1109/TPAMI.2021.3057833 (Published)

Holistically Associated Transductive Zero-Shot Learning, by XU, Yangyang; XU, Xuemiao; HAN, Guoqiang; HE, Shengfeng. (2022). *IEEE Transactions on Cognitive and Developmental Systems, 14* (2), 437-447. https://doi.org/10.1109/TCDS.2021.3049274 (Published)

CrowdGAN: Identity-Free Interactive Crowd Video Generation and Beyond, by CHAI, Liangyu; LIU, Yongtuo; LIU, Wenxi; HAN, Guoqiang; HE, Shengfeng. (2022). *IEEE Transactions on Pattern Analysis and Machine Intelligence, 44* (6), 2856-2871. https://doi.org/10.1109/TPAMI.2020.3043372 (Published)

Learning transferable perturbations for image captioning, by WU, Hanjie; LIU, Yongtuo; CAI, Hongmin; HE, Shengfeng. (2022). *ACM Transactions on Multimedia Computing, Communications and Applications, 18* (2), https://doi.org/10.1145/3478024 (Published)

Mask-guided deformation adaptive network for human parsing, by MAO, Aihua; LIANG, Yuan; JIAO, Jianbo; LIU, Yongtuo; HE, Shengfeng

. (2022). *ACM Transactions on Multimedia Computing, Communications and Applications, 18* (1), 1-20. https://doi.org/10.1145/3467889 (Published)

SeqSeg: A sequential method to achieve nasopharyngeal carcinoma segmentation free from background dominance, by TAO, Guihua; LI, Haojiang; HUANG, Jiabin; HAN, Chu; CHEN, Jiazhou; RUAN, Guangying; HUANG, Wenjie; HU, Yu; DAN, Tingting; ZHANG, Bin; HE, Shengfeng. (2022). *Medical Image Analysis, 78* https://doi.org/10.1016/j.media.2022.102381 (Published)

Pro-PULSE: Learning Progressive Encoders of Latent Semantics in GANs for Photo Upsampling, by ZHOU, Yang; XU, Yangyang; DU, Yong; WEN, Qiang; HE, Shengfeng. (2022). *IEEE Transactions on Image Processing, 31* 1230-1242. https://doi.org/10.1109/TIP.2022.3140603 (Published)

Self-Supervised Matting-Specific Portrait Enhancement and Generation, by XU, Yangyang; ZHOU, Zeyang; HE, Shengfeng. (2022). *IEEE Transactions on Image Processing, 31* 5332-5342. https://doi.org/10.1109/TIP.2022.3194711 (Published)

Video Snapshot: Single Image Motion Expansion via Invertible Motion Embedding, by ZHU, Qianshu; HAN, Chu; HAN, Guoqiang; WONG, Tien-Tsin; HE, Shengfeng. (2021). *IEEE Transactions on Pattern Analysis and Machine Intelligence, 43* (12), 4491-4504. https://doi.org/10.1109/TPAMI.2020.3001644 (Published)

Few-Shot Breast Cancer Metastases Classification via Unsupervised Cell Ranking, by CHEN, Jiaojiao; JIAO, Jianbo; HE, Shengfeng; HAN, Guoqiang; QIN, Jing. (2021). *IEEE/ACM Transactions on Computational Biology and Bioinformatics, 18* (5), 1914-1923. https://doi.org/10.1109/TCBB.2019.2960019 (Published)

Invertible grayscale with sparsity enforcing priors, by DU, Yong; XU, Yangyang; YE, Taizhong; WEN, Qiang; XIAO, Chufeng; DONG, Junyu; HAN, Guoqiang; HE, Shengfeng . (2021). *ACM Transactions on Multimedia Computing, Communications and Applications, 17* (3), 1-17. https://doi.org/10.1145/3451993 (Published)

Transductive Zero-Shot Action Recognition via Visually Connected Graph Convolutional Networks, by XU, Yangyang; HAN, Chu; QIN, Jing; XU, Xuemiao; HAN, Guoqiang; HE, Shengfeng. (2021). *IEEE Transactions on Neural Networks and Learning Systems, 32* (8), 3761-3769. https://doi.org/10.1109/TNNLS.2020.3015848 (Published)

Deep Multiview Clustering via Iteratively Self-Supervised Universal and Specific Space Learning, by ZHANG, Yue; HUANG, Qinjian; ZHANG, Bin; HE, Shengfeng; DAN, Tingting; PENG, Hong; CAI, Hongmin. (2022). *IEEE Transactions on Cybernetics, 52* (11), 11734-11746. https://doi.org/10.1109/TCYB.2021.3086153 (Published)

Multi-View Face Synthesis via Progressive Face Flow, by XU, Yangyang; XU, Xuemiao; JIAO, Jianbo; LI, Keke; XU, Cheng; HE, Shengfeng. (2021). *IEEE Transactions on Image Processing, 30* 6024-6035. https://doi.org/10.1109/TIP.2021.3090658 (Published)

Mask-ShadowNet: Toward Shadow Removal via Masked Adaptive Instance Normalization, by HE, Shengfeng; PENG, Bing; DONG, Junyu; DU, Yong. (2021). *IEEE Signal Processing Letters, 28* 957-961. https://doi.org/10.1109/LSP.2021.3074082 (Published)

Weakly supervised segmentation via instance-aware propagation, by XIN, Huang; ZHU, Qianshu; LIU, Yongtuo; HE, Shengfeng. (2021). *Neurocomputing, 447* 1-9. https://doi.org/10.1016/j.neucom.2021.02.093 (Published)

Fast scene labeling via structural inference, by ZHANG, Huaidong; HAN, Chu; ZHANG, Xiaodan; DU, Yong; XU, Xuemiao; HAN, Guoqiang; QIN, Jing; HE, Shengfeng . (2021). *Neurocomputing, 442* 317-326. https://doi.org/10.1016/j.neucom.2020.12.134 (Published)

Smart scribbles for image matting, by XIN, Yang; QIAO, Yu; CHEN, Shaozhe; HE, Shengfeng; YIN, Baocai; ZHANG, Qiang; WEI, Xiaopeng; LAU, Rynson W. H.. (2021). *ACM Transactions on Multimedia Computing, Communications and Applications, 16* (4), https://doi.org/10.1145/3408323 (Published)

Mask-ShadowNet: Toward Shadow Removal via Masked Adaptive Instance Normalization, by HE, Shengfeng; PENG, Bing; DONG, Junyu; DU, Yong. (2021). *IEEE Signal Processing Letters, 28* 957-961. https://doi.org/10.1109/LSP.2021.3074082 (Published)

Blind Image Denoising via Dynamic Dual Learning, by DU, Yong; HAN, Guoqiang; TAN, Yinjie; XIAO, Chufeng; HE, Shengfeng. (2021). *IEEE Transactions on Multimedia, 23* 2139-2152. https://doi.org/10.1109/TMM.2020.3008057 (Published)

Unsupervised Domain Adaptation via Importance Sampling, by XU, Xuemiao; HE, Hai; ZHANG, Huaidong; XU, Yangyang; HE, Shengfeng. (2020). *IEEE Transactions on Circuits and Systems for Video Technology, 30* (12), 4688-4699. https://doi.org/10.1109/TCSVT.2019.2963318 (Published)

Two-stage Photograph Cartoonization via Line Tracing, by LI, Simin; WEN, Qiang; ZHAO, Shuang; SUN, Zixun; HE, Shengfeng. (2020). *Computer Graphics Forum, 39* (7), 587-599. https://doi.org/10.1111/cgf.14170 (Published)

Fast User-Guided Single Image Reflection Removal via Edge-Aware Cascaded Networks, by ZHANG, Huaidong; XU, Xuemiao; HE, Hai; HE, Shengfeng; HAN, Guoqiang; QIN, Jing; WU, Dapeng . (2020). *IEEE Transactions on Multimedia, 22* (8), 2012-2023. https://doi.org/10.1109/TMM.2019.2951461 (Published)

Exploring Duality in Visual Question-Driven Top-Down Saliency, by HE, Shengfeng; HAN, Chu; HAN, Guoqiang; QIN, Jing. (2020). *IEEE Transactions on Neural Networks and Learning Systems, 31* (7), 2672-2679. https://doi.org/10.1109/TNNLS.2019.2933439 (Published)

Image captioning via semantic element embedding, by ZHANG, Xiaodan; HE, Shengfeng; SONG, Xinhang; LAU, Rynson W.H.; JIAO, Jianbin; YE, Qixiang. (2020). *Neurocomputing, 395* 212-221. https://doi.org/10.1109/10.1016/j.neucom.2018.02.112 (Published)

Deep Pixel-Level Matching via Attention for Video Co-Segmentation, by LI, Junliang; WONG, Hon-Cheng; HE, Shengfeng; LO, Sio-Long; ZHANG, Guifang; WANG, Wenxiao. (2020). *Applied Sciences, 10* (6), https://doi.org/10.3390/app10061948 (Published)

Example-Based Colourization Via Dense Encoding Pyramids, by XIAO, Chufeng; HAN, Chu; ZHANG, Zhuming; QIN, Jing; WONG, Tien-Tsin; HAN, Guoqiang; HE, Shengfeng. (2020). *Computer Graphics Forum, 39* (1), 20-33. https://doi.org/10.1111/cgf.13659 (Published)

Example-Based Colourization Via Dense Encoding Pyramids, by XIAO, Chufeng; HAN, Chu; ZHANG, Zhuming; QIN, Jing; WONG, Tien-Tsin; HAN, Guoqiang; HE, Shengfeng. (2020). *Computer Graphics Forum, 39* (1), 20-33. https://doi.org/10.1111/cgf.13659 (Published)

Boundary-Aware RGBD Salient Object Detection With Cross-Modal Feature Sampling, by NIU, Yuzhen; LONG, Guanchao; LIU, Wenxi; GUO, Wenzhong; HE, Shengfeng. (2020). *IEEE Transactions on Image Processing, 29* 9496-9507. https://doi.org/10.1109/TIP.2020.3028170 (Published)

Coupled Rain Streak and Background Estimation via Separable Element-wise Attention, by TAN, Yinjie; WEN, Qiang; QIN, Jing; JIAO, Jianbo; HAN, Guoqiang; HE, Shengfeng. (2020). *IEEE Access, 8* 16627-16636. https://doi.org/10.1109/ACCESS.2020.2967891 (Published)

FormNet: Formatted Learning for Image Restoration, by JIAO, Jianbo; TU, Wei-Chih; LIU, Ding; HE, Shengfeng; LAU, Rynson W. H.; HUANG, Thomas S.. (2020). *IEEE Transactions on Image Processing, 29* 6302-6314. https://doi.org/10.1109/TIP.2020.2990603 (Published)

Real-Time Hierarchical Supervoxel Segmentation via a Minimum Spanning Tree, by WANG, Bo; CHEN, Yiliang; LIU, Wenxi; QIN, Jing; DU, Yong; HAN, Guoqiang; HE, Shengfeng. (2020). *IEEE Transactions on Image Processing, 29* 9665-9677. https://doi.org/10.1109/TIP.2020.3030502 (Published)

Invertible Grayscale via Dual Features Ensemble, by YE, Taizhong; DU, Yong; DENG, Junjie; HE, Shengfeng. (2020). *IEEE Access, 8* 89670-89679. https://doi.org/10.1109/10.1109/ACCESS.2020.2994148 (Published)

Learning Long-Term Structural Dependencies for Video Salient Object Detection, by WANG, Bo; LIU, Wenxi; HAN, Guoqiang; HE, Shengfeng. (2020). *IEEE Transactions on Image Processing, 29* 9017-9031. https://doi.org/10.1109/TIP.2020.3023591 (Published)

Crowd Counting Via Cross-Stage Refinement Networks, by LIU, Yongtuo; WEN, Qiang; CHEN, Haoxin; LIU, Wenxi; QIN, Jing; HAN, Guoqiang; HE, Shengfeng. (2020). *IEEE Transactions on Image Processing, 29* 6800-6812. https://doi.org/10.1109/TIP.2020.2994410 (Published)

Age estimation via attribute-region association, by CHEN, Yiliang; HE, Shengfeng; TAN, Zichang; HAN, Chu; HAN, Guoqiang; QIN, Jing. (2019). *Neurocomputing, 367* 346-356. https://doi.org/10.1016/j.neucom.2019.08.034 (Published)

Interactive Hierarchical Object Proposals, by CHEN, Mingliang; ZHANG, Jiawei; HE, Shengfeng; YANG, Qingxiong; LI, Qing; YANG, Ming-Hsuan. (2019). *IEEE Transactions on Circuits and Systems for Video Technology, 29* (9), 2552-2566. https://doi.org/10.1109/TCSVT.2017.2775446 (Published)

Proposal-Driven Segmentation for Videos, by LI, Junliang; HE, Shengfeng; WONG, Hon-Cheng; LO, Sio-Long. (2019). *IEEE Signal Processing Letters, 26* (8), 1098-1102. https://doi.org/10.1109/LSP.2019.2921654 (Published)

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Single image reflection removal beyond linearity, by WEN, Qiang; TAN, Yinjie; QIN, Jing; LIU, Wenxi; HAN, Guoqiang; HE, Shengfeng. (2019.0). *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR),* (pp. 3771-3779) USA: IEEE. https://doi.org/10.1109/CVPR.2019.00389 (Published)

Self-supervised spatio-temporal representation learning for videos by predicting motion and appearance statistics, by WANG, Jiangliu; JIAO, Jianbo; BAO, Linchao; HE, Shengfeng; LIU, Yunhui; LIU, Wei. (2019.0). *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition,* USA: (Published)

Joint shape matching for overlapping cytoplasm segmentation in cervical smear images, by SONG, Youyi; QIN, Jing; LEI, Baiying; HE, Shengfeng; CHOI, Kup-Sze. (2019.0). *Proceedings of the 16th IEEE International Symposium on Biomedical Imaging, Venice, Italy, 2019 April 8-11,* (pp. 191-194) New Jersey: IEEE. http://doi.org/10.1109/ISBI.2019.8759259 (Published)

Active matting, by YANG, Xin; XU, Ke; CHEN, Shaozhe; HE, Shengfeng; YIN, Baocai; LAU, Rynson. (2018.0). *Proceedings of the Conference on Neural Information Processing Systems (NeurIPS 2018), Montréal, Canada, December 2-8,* (pp. 1-11) USA: (Published)

Delving into salient object subitizing and detection, by HE, Shengfeng; JIAO, Jianbo; ZHANG, Xiaodan; HAN, Guoqiang; LAU, Rynson W.H. (2017.0). *Proceedings of the IEEE International Conference on Computer Vision,* (pp. 1059-1067) Italy: IEEE. https://doi.org/10.1109%2Ficcv.2017.120 (Published)

FormResNet: Formatted residual learning for image restoration, by JIAO, Jianbo; TU, Wei-chih, HE, Shengfeng; LAU, Rynson W. H.. (2017.0). *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2017, Honolulu, Hawaii, USA, July 21-26,* (pp. 1034-1042) New York, NY, USA: IEEE. https://doi.org/10.1109/CVPRW.2017.140 (Published)

Learning to hallucinate face images via component generation and enhancement, by SONG, Yibing; ZHANG, Jiawei; HE, Shengfeng; BAO, Linchao; YANG, Qingxiong. (2017.0). *Proceedings of the 26th International Joint Conference on Artificial Intelligence (IJCAI),* Australia: International Joint Conferences on Artificial Intelligence Organization. (Published)

DeshadowNet: A multi-context embedding deep network for shadow removal, by QU, Liangqiong; TIAN, Jiandong; HE, Shengfeng; TANG, Yandong; LAU, Rynson W. H.. (2017.0). *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017, Honolulu, Hawaii, USA, July 21-26,* (pp. 2308-2316) New York, NY, USA: IEEE. https://doi.org/10.1109/CVPR.2017.248 (Published)

Keyword-driven image captioning via Context-dependent Bilateral LSTM, by ZHANG, Xiaodan; HE, Shengfeng; SONG, Xinhang; WEI, Pengxu; JIANG, Shuqiang; YE, Qixiang; JIAO, Jianbin; LAU, Rynson W. H.. (2017.0). *Proceedings of 2017 IEEE International Conference on Multimedia and Expo, Hong Kong, China, July 10-14,* (pp. 781-786) New York, NY, USA: IEEE Computer Society. https://doi.org/10.1109/ICME.2017.8019525 (Published)

Real-time salient object detection with a minimum spanning tree, by TU, Wei-Chih; HE, Shengfeng; YANG,

Qingxiong; CHIEN, Shao-Yi. (2016.0). *Proceedings of the 29th IEEE Computer Society Conference on Computer Vision and Pattern Recognition, Las Vegas, USA, 2016 June 26 - July 1,* (pp. 2334-2342) New Jersey: IEEE. https://doi.org/10.1109/CVPR.2016.256 (Published)

Exemplar-driven top-down saliency detection via deep association, by HE, Shengfeng; LAU, Rynson W. H.; YANG, Qingxiong. (2016.0). *Proceedings of the 2016 IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Las Vegas, Nevada, USA, June 27-30,* (pp. 5723-5732) New York, NY, USA: IEEE Computer Society. https://doi.org/10.1109/CVPR.2016.617 (Published)

Oriented object proposals, by HE, Shengfeng; LAU, Rynson W. H.. (2015.0). *2015 IEEE International Conference on Computer Vision (ICCV): Santiago, Chile, December 7-13: Proceedings,* (pp. 280-288) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ICCV.2015.40 (Published)

Saliency detection with flash and no-flash image pairs, by HE, Shengfeng; LAU, Rynson W.H.. (2014.0). *Proceedings of the 13th European Conference on Computer Vision (ECCV), Zurich, Switzerland, September 6-12,* (pp. 110-124) Germany: Springer Verlag. https://doi.org/10.1007/978-3-319-10578-9_8 (Published)

Consistent stereo image editing, by YAN, Tao; HE, Shengfeng; LAU, Rynson W.H.; XU, Yun. (2013.0). *Proceedings of the 21st ACM international conference on Multimedia, Barcelona, Spain, 2013 Oct 21-25,* (pp. 677-680) New York: ACM. https://doi.org/10.1145/2502081.2502177 (Published)

Visual tracking via locality sensitive histograms, by HE, Shengfeng; YANG, Qingxiong; LAU, Rynson W.H.; WANG, Jian; YANG, Ming-Hsuan. (2013.0). *Proceedings of the 26th IEEE Conference on Computer Vision and Pattern Recognition, Portland, USA, 2013 Jun 23-28,* (pp. 2427 -2434) New Jersey: IEEE. https://doi.org/10.1109/CVPR.2013.314 (Published)

Visual tracking via locality sensitive histograms, by HE, Shengfeng; YANG, Qingxiong; LAU, Rynson W.H.; WANG, Jian; YANG, Ming-Hsuan. (2013.0). *Proceedings of the 26th IEEE Conference on Computer Vision and Pattern Recognition, Portland, USA, 2013 Jun 23-28,* (pp. 2427-2434) New Jersey: IEEE. https://doi.org/10.1109/CVPR.2013.314 (Published)

An efficient adaptive vortex particle method for real-time smoke simulation, by HE, Shengfeng; WONG, Hon-Cheng; WONG, Un-Hong
. (2011.0). *Proceedings of the 12th International Conference on Computer-Aided Design and Computer Graphics, Jinan, China, 2011 September 15-17,* (pp. 317-324) New Jersey: IEEE. https://doi.org/10.1109/CAD/Graphics.2011.69 (Published)

## Research Grants

Singapore Management University

AntiGen: Safeguarding Artistic and Personal Visual Data from Generative AI, AI Governance Research, AI Singapore , PI (Project Level): HE Shengfeng, 2023, S$249,999.1

Towards Interpretable Latent Spaces of Generative Models, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): HE Shengfeng, 2023, S$120,000

Other Institutions

Exploring the Interpretability of Generative Networks, Distinguished Young Scholars, Guangdong Natural Science Funds PI (Project Level): HE Shengfeng, 2022, CNY1,000,000

Unstructured Scenes Multi-Robot Scheduling via Unsupervised Image Understanding, International Science and Technology Cooperation Project, Guangdong Natural Science Funds PI (Project Level): HE Shengfeng, 2021, CNY500,000

Unsupervised Feature Sparsification for Image Editing, General Project, Guangdong Natural Science Funds PI (Project Level): HE Shengfeng, 2021, CNY100,000

Unsupervised Image Understanding for Image Editing, Basic and Applied Research Project, Bureau of Science and Technology of Guangzhou PI (Project Level): HE Shengfeng, 2021, CNY50,000

Cross-domain Editing based on GAN prior, CCF-Tencent Open Research Fund, CCF-Tencent Open Research Fund PI (Project Level): HE Shengfeng, 2021, CNY150,000

Visual Attention-driven Image Editing and Completion, General Project, National Natural Science Foundation of China PI (Project Level): HE Shengfeng, 2020, CNY676,000

Animatable Still Images, CCF-Tencent Continuous Cooperation Fund, Tencent PI (Project Level): HE Shengfeng, 2020, CNY200,000

Manga Style Disentanglement, CCF-Tencent Open Research Fund, CCF-Tencent Open Research Fund PI (Project Level): HE Shengfeng, 2019, CNY150,000

Analysis and Understanding of Multi-salient Objects, Youth Project, National Natural Science Foundation of China PI (Project Level): HE Shengfeng, 2018, CNY304,000

Research on Deep Image Processing, Excellent Young Research Funds, Funds of Central Universities PI (Project Level): HE Shengfeng, 2018, CNY500,000

Detection and Segmentation of Salient Objects in Videos, CCF-Tencent Open Creative Fund, CCF-Tencent Open Creative Fund PI (Project Level): HE Shengfeng, 2018, CNY30,000

Research and Industrialization of Video Big Data Intelligent Platform, Guangzhou Key Industrial Technology Research Project, Bureau of Science and Technology of Guangzhou PI (Project Level): HE Shengfeng, 2017, CNY1,000,000

### Intellectual Property

Granted: HE Shengfeng, "Peak response enhancement based instance segmentation algorithm and computing equipment"

Granted: HE Shengfeng, "Video object segmentation method, device, equipment and medium"

Granted: HE Shengfeng, "Method, device, computer equipment and storage medium for processing cartoonization of photograph images"

Granted: HE Shengfeng, "Image saliency detection method, device, computer equipment and storage medium"

Granted: HE Shengfeng, "Multi-task fusion fine-grained character segmentation system and method"

Granted: HE Shengfeng, "Method and device for removing shadow from image"

Granted: HE Shengfeng, "L0 regularization based invertible gray image algorithm and computing equipment"

Granted: HE Shengfeng, "Video decoding and encoding method, device, medium and electronic equipment"

Granted: HE Shengfeng, "Data processing method and computer equipment"

Granted: HE Shengfeng, "A Method of Decoupling Classification and Regression Features in Target Detection"

## TEACHING

### Courses Taught

Singapore Management University

Undergraduate Programmes :

Computational Thinking and Programming

Computer Graphics and Virtual Reality

Computer Science Project Experience

Introduction to Programming

Postgraduate Research Programmes :

Empirical Research Project 1

Empirical Research Project 2

Other Institutions

Advanced Language Programming (C++), Undergraduate, South China University of Technology

Multimedia Technologies, Undergraduate, South China University of Technology

## THESES AND DISSERTATIONS

### Theses and Dissertations Supervised

Other Institutions

Supervisor, "Research on Face Image Editing Based on Prior-aware Deep Adversarial Learning", Dissertation by XU Cheng, PhD, South China University of Technology, 2023

Supervisor, "Research on Recognition and Generation Methods Based on Incomplete Visual Data", Dissertation by XU Yangyang, PhD, South China University of Technology, 2021

Supervisor, "Deep Learning Based Visual Repeated Pattern Analysis And Application", Dissertation by ZHANG Huaidong, PhD, South China University of Technology, 2020

Supervisor, "Learning sparse and deep representations for image restoration", Dissertation by DU Yong, PhD, South China University of Technology, 2019

### Theses and Dissertations Assessed

Other Institutions

External Examiner, "Low-Level Vision Processing: New Approaches and Sensors", Dissertation by WANG Zhouxia, PhD, The University of Hong Kong, 2023

External Examiner, "Facial Expression: From Recognition to Animation", Dissertation by FAN Yingruo, The University of Hong Kong, 2022

External Examiner, "New Methods for Unsupervised Video Object Segmentation and Guidewire Segmentation in X-Ray Fluoroscopy Sequences", Dissertation by ZHANG Guifang, Macau University of Science and Technology, 2022

External Examiner, "Expressive Talking Head Generation with Granular Audio-Visual Control", Thesis by PAN Yan, The Chinese University of Hong Kong, Shenzhen, 2022

External Examiner, "Learning Based Image Style Editing", Dissertation by JIN Yuqian, Macau University of Science and Technology, 2021

External Examiner, "New Methods for Facial Image Processing", Dissertation by WANG Wenxiao, Macau University of Science and Technology, 2021

## OTHER ACADEMIC AND PROFESSIONAL ACTIVITIES

### Other Grants and Funding Received (Non-Research)

Adobe Gift Fund, Adobe, Sep 2024, S$5,000

Google Gift Fund, Google, Jan 2024

Adobe Gift Fund, Adobe, Sep 2023

Invited Seminars, Talks and Lectures

Generative AI in Industry, 01 Nov 2023. AI Translational Seminar

From Content Understanding to Content Creation, 01 Sep 2023. SCIS Research Cluster Seminar

Creative AI, 01 May 2023. Singapore Vision Day

Towards Interpreting and Reusing Generative Models, 01 Sep 2022. HKBU CS Online Seminar

Discovering and Reusing Prior Knowledge from Visual Data, 01 Apr 2022. SUSTech STAT-CS Colloquium

Pixel-level Image Understanding and Editing, 01 Aug 2019. CCF Young Computer Scientists& Engineers Forum

Pixel-level Image Understanding and Editing, 01 Jul 2019. USTC Summer School 2019

How to Do Research in Computer Vision, 01 May 2019. PhD Salon

Zero-shot Learning, 01 Jul 2017. Computer Science Youth Academic Forum

Visual Tracking via Locality Sensitive Histograms, 01 Apr 2014. MUST Research Seminar

Visual Tracking via Locality Sensitive Histograms, 01 Apr 2014. University of Macau Research Seminar

## EXTERNAL SERVICE – PROFESSIONAL

Conference Chair, Pacific Graphics 2026, 2024 - 2026

Editor Associate Editor, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2024 - Present

Editor Associate Editor, Visual Intelligence, 2024 - Present

Editor Associate Editor, IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2023 - Present

Area Chair, International Conference on Machine Learning (ICML) , 2023 - Present

Senior Program Committee, AAAI Conference on Artificial Intelligence (AAAI), 2023 - Present

Lead Guest Editor, International Journal of Computer Vision (IJCV), 2023 - 2024

Reviewer Grant Proposal, Research Grant Council (RGC) of Hong Kong, 2023 - Present

Senior Program Committee, International Joint Conferences on Artificial Intelligence (IJCAI), 2022 - Present

Editor Associate Editor, Neurocomputing, 2021 - Present

Area Chair, British Machine Vision Conference (BMVC), 2019 - 2020

Tutorial Chair, ChinaGraph, 2019