丛润民

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简要概述

丛润民，北京交通大学信息科学研究所、数字媒体信息处理研究中心 (科技部重点领域创新团队、教育部创新团队) 副教授，入选**中国科协“青年人才托举”工程、国家人社部“香江学者”计划、“北京市科技新星”计划、北京市科协“青年人才托举”工程、北京交通大学青年英才计划**。2019 年 6 月毕业于天津大学信息与通信工程专业，获工学博士学位，并先后在新加坡南洋理工大学、香港城市大学从事研究工作，IEEE 会员、亚太信号与信息处理协会图像、视频与多媒体 (APSIPA IVM) 技术委员会委员、CSIG 高级会员、CCF/CAAI/CIE 会员、中国图像图形学会青年工作委员会**副秘书长**、北京图象图形学学会**理事**。。主要研究方向包括**计算机视觉、人工智能、多媒体信息处理与内容理解、视觉显著性检测与分割、遥感影像解译、水下环境感知、深度学习**等。主持、参与了包括国家自然科学基金、国家重点研发计划、中央高校基本科研业务费、天津市自然科学基金等多项科研项目。在 IEEE TIP、TCyb、TII、TMM、TCSVT、TGRS、NeurIPS、CVPR、ECCV、AAAI、IJCAI、ACM MM 等国际学术期刊及会议上发表论文 **50 余篇**，其中CCF-A/IEEE Trans 论文 32 篇，ESI 高被引论文 7 篇；授权国家发明专利 **16 项**。担任 SCI 期刊 Signal, Image and Video Processing **副主编**，IEEE Journal of Oceanic Engineering、Signal Processing : Image Communication、Multimedia Tools and Applications 等 SCI 期刊**客座编辑**，IEEE TPAMI、TIP、TII、TIE、TCyb、TMM、TCSVT、TGRS、TCDS、IJCV、PR 等国际期刊**审稿人**，以及 NeurIPS、CVPR、ICCV、ICML、AAAI、IJCAI、ACM MM、ICME、ICMR、NCIG 等学术会议**领域主席、专题主席、程序委员会委员和特邀讲者**。荣获 **IEEE ICME 最佳学生论文奖亚军、天津市科学技术进步一等奖、ACM SIGWEB 中国新星奖、中国图象图形学学会优秀博士学位论文奖、第十五届北京青年优秀科技论文奖、全国博士后人工智能发展与应用论坛优秀论文奖、北京图象图形学学会优秀博士学位论文奖**等。

教育/工作经历

北京交通大学，*副教授、硕士生导师* 2019.07 - 现在

- 计算机与信息技术学院、信息科学研究所
- 数字媒体信息处理研究中心 (科技部重点领域创新团队、教育部创新团队)
- 现代信息科学与网络技术北京市重点实验室
- 团队负责人：赵耀 教授 (长江学者、国家杰青、万人领军人才)

香港城市大学，电脑科学系，*研究助理* 2018.05 - 2019.05

- 合作导师：Sam Kwong 讲席教授 (IEEE Fellow)

新加坡南洋理工大学，计算机科学与工程学院，*访问博士* 2016.12 - 2017.02

- 合作导师：Weisi Lin 教授 (IEEE Fellow)

天津大学，信息与通信工程专业，*博士* 2015.09 - 2019.06

- 博士论文：Research on Visual Saliency Detection with Comprehensive Information (CSIG 优博、BSIG 优博、TJU 优博基金)
- 导　　师：黄庆明 讲席教授 (国家杰青、IEEE Fellow)、雷建军 教授 (国家杰青)

研究领域

- **注意力感知与显著性计算**：探索针对 RGB 图像、RGB-D 图像、关联图像组、视频序列、光场图像、360° 全景图像的显著性目标检测与分割解决方案。
- **遥感影像智能解译与分析**：探索针对光学遥感图像/高光谱图像/雷达图像/无人机图像的增强、分类、分割、检索、重建、检测等任务的解决方案。
- **开放环境下视觉内容增强**：探索不同环境下各类内容增强问题，包括低光照/雾霾/水下/模糊/反射图像、视频的质量评价/增强/复原/超分辨率重建等。

- **多媒体大数据理解与应用**：探索面向跨媒体、跨模态数据应用的信息处理与内容理解问题，包括文本-视觉指代分割、跨媒体信息检索、视觉问答等。

科研项目

- (**主持, 2021-2023**) “面向 RGB-D 数据的视觉显著性目标检测研究”, 国家自然科学基金 (青年项目)
- (**主持, 2021-2023**) “深度超分辨率重建与显著性计算”, 中国科协青年人才托举工程 (国拨经费)
- (**主持, 2020-2023**) “深度学习赋能的立体显著性分析与超分辨率重建”, 北京市科技新星计划
- (**主持, 2019-2021**) “面向多源、多模态数据的显著性目标检测研究”, 中央高校基本科研业务费
- (**主持, 2020-2021**) “面向 RGB-D 图像的视觉显著性目标检测研究”, 中国博士后科学基金 (特别资助)
- (**主持, 2019-2021**) “多源数据背景下的视觉显著性目标检测研究”, 中国博士后科学基金 (面上项目)
- (**主持, 2021-2022**) “基于跨模态信息交互的深度数据全面感知与理解”, CAAI-华为 MindSpore 学术奖励基金
- (**主持, 2020-2021**) “深度信息驱动的视觉显著性分析与超分辨率重建”, CAAI-华为 MindSpore 学术奖励基金
- (参加, 2019-2020) “TOF 超分和边缘优化”, 华为技术合作项目
- (参加, 2017-2021) “面向大数据应用的桌面实时真三维显示技术”, 国家重点研发计划项目子课题

荣誉奖励

- **人才计划:**
  - 中国科协青年人才托举工程，中国科协，2021
  - 香江学者计划，国家人社部，2020
  - 北京市科技新星，北京市科委，2020
  - 北京市科协青年人才托举工程，北京市科协，2020
  - 北京交通大学青年英才计划，北京交通大学，2021
- **学术研究:**
  - 中国图象图形学学会优秀博士学位论文奖 (全国 10 篇)，2019
  - 天津市科学技术进步一等奖，2018
  - ACM SIGWEB 中国新星奖，2021
  - IEEE CVPR 杰出审稿人，2021
  - IEEE ICME 最佳学生论文奖亚军，2018
  - 第十五届北京青年优秀科技论文奖，2019
  - 北京图象图形学学会优秀博士学位论文奖 (京津冀 6 篇)，2019
  - 全国信创与人工智能发展博士后学术论坛优秀论文二等奖，2021
  - 全国博士后人工智能发展与应用论坛优秀论文奖，2020
  - 全国博士后人工智能发展与应用论坛优秀论文奖二等，2019
  - 北京交通大学计算机与信息技术学院 2019 年度十大科技成果，2019
- **教书育人:**
  - 北京交通大学 2020 年度青年教师教学基本功大赛校级二等奖、院级特等级，2020
  - 北京交通大学计算机与信息技术学院师德师风先进个人“立德树人”奖，2021
  - 北京交通大学计算机与信息技术学院 2019 年度优秀本科班主任，2019

代表性成果

专著/译著：

- **Runmin Cong**, Hao Chen, Hongyuan Zhu, and Huazhu Fu, “Foreground detection and segmentation in RGB-D images”, *in Paul Rosin, Yukun Lai, Yonghuai Liu, Ling Shao, RGB-D Image Analysis and Processing*, ISBN 978-3-030-28602-6, Dec. 2019. (专著章节)
- Chongyi Li, Huazhu Fu, Miao Yang, **Runmin Cong**, and Chunle Guo, “ Runmin Cong, and Chunle Guo, ”,

in Zhenghua Chen, Min Wu, and Xiaoli Li, Generalization with Deep Learning: for improvement on sensing capability, 978-981-121-883-5, Apr. 2021. (专著章节)

期刊论文：

- **Runmin Cong**, Jianjun Lei, Huazhu Fu, Weisi Lin, Qingming Huang, Xiaochun Cao, and Chunping Hou, "An iterative co-saliency framework for RGBD images", *IEEE Transactions on Cybernetics*, 49(1), pp. 233-246, 2019. (SCI 一区, IF=11.079)
- **Runmin Cong**, Jianjun Lei, Huazhu Fu, Junhui Hou, Qingming Huang, and Sam Kwong, "Going from RGB to RGBD saliency: A depth-guided transformation models", *IEEE Transactions on Cybernetics*, 50(8), pp. 3627-3639, 2020. (SCI 一区, IF=11.079, **ESI 高被引论文**)
- **Runmin Cong**, Jianjun Lei, Huazhu Fu, Qingming Huang, Xiaochun Cao, and Chunping Hou, "Co-saliency detection for RGBD images based on multi-constraint feature matching and cross label propagation", *IEEE Transactions on Image Processing*, 27(2), pp. 568-579, 2018. (CCF A, SCI 一区, IF=9.340)
- **Runmin Cong**, Jianjun Lei, Huazhu Fu, Fatih Porikli, Qingming Huang, and Chunping Hou, "Video saliency detection via sparsity-based reconstruction and propagation", *IEEE Transactions on Image Processing*, 28(10), pp. 4819-4831, 2019. (CCF A, SCI 一区, IF=9.340)
- **Runmin Cong**, Jianjun Lei, Huazhu Fu, Ming-Ming Cheng, Weisi Lin, and Qingming Huang, "Review of visual saliency detection with comprehensive information", *IEEE Transactions on Circuits and Systems for Video Technology*, 29(10), pp. 2941-2959, 2019. (SCI 二区, IF=4.133, **ESI 高被引论文**)
- **Runmin Cong**, Jianjun Lei, Huazhu Fu, Qingming Huang, Xiaochun Cao, and Nam Ling, "HSCS: Hierarchical sparsity based co-saliency detection for RGBD images", *IEEE Transactions on Multimedia*, 21(7), pp. 1660-1671, 2019. (SCI 二区, IF=6.051)
- **Runmin Cong**, Yumo Zhang, Leyuan Fang, Jun Li, Yao Zhao, and Sam Kwong, "RRNet: Relational reasoning network with parallel multi-scale attention for salient object detection in optical remote sensing images", *IEEE Transactions on Geoscience and Remote Sensing*, 2021. In Press. (SCI 二区, IF=5.885)
- **Runmin Cong**, Jianjun Lei, Changqing Zhang, Qingming Huang, Xiaochun Cao, and Chunping Hou, "Saliency detection for stereoscopic images based on depth confidence analysis and multiple cues fusion", *IEEE Signal Processing Letters*, 23(6), pp. 819-823, 201). (SCI 三区, IF=3.105)
- **Runmin Cong**, Ping Han, Chongyi Li, Jiaji He, and Zaiji Zhang, "Manmade target extraction based on multi-stage decision and its application for change detection in polarimetric synthetic aperture radar image", *Journal of Electronic Imaging*, 25(5), pp. 1-13, 2016. (SCI 四区, IF=0.924)
- Qijian Zhang, **Runmin Cong**‡, Chongyi Li, Ming-Ming Cheng, Yuming Fang, Xiaochun Cao, Yao Zhao, and Sam Kwong, "Dense attention fluid network for salient object detection in optical remote sensing images", *IEEE Transactions on Image Processing*, 30, pp. 1305-1317, 2021. (CCF A, SCI 一区, IF=9.340, ‡ 共同一作、通讯作者)
- Zuyao Chen†, **Runmin Cong**†, Qianqian Xu, and Qingming Huang, "DPANet: Depth potentiality-aware gated attention network for RGB-D salient object detection", *IEEE Transactions on Image Processing*, 30, pp. 7012-7024, 2021. (CCF A, SCI 一区, IF=9.340, † 共同一作, **ESI 高被引论文**)
- Chongyi Li, **Runmin Cong**‡, Sam Kwong, Junhui Hou, Huazhu Fu, Guopu Zhu, Dingwen Zhang, and Qingming Huang, "ASIF-Net: Attention steered interweave fusion network for RGBD salient object detection", *IEEE Transactions on Cybernetics*, 50(1), pp. 88-100, 2021. (SCI 一区, IF=11.079, ‡ 共同一作、通讯作者, **ESI 高被引论文**)
- Chongyi Li, **Runmin Cong**‡, Junhui Hou, Sanyi Zhang, Yue Qian, and Sam Kwong, "Nested network with two-stream pyramid for salient object detection in optical remote sensing images", *IEEE Transactions on Geoscience and Remote Sensing*, 57(11), pp. 9156-9166, 2019. (SCI 二区, IF=5.885, ‡ 共同一作、通讯作者)
- Hua Li, **Runmin Cong***, Sam Kwong, Chuanbo Chen, Qianqian Xu, and Chongyi Li, "Stereo superpixel: An iterative framework based on parallax consistency and collaborative optimization", *Information Sciences*, 556, pp. 209-222, 2021. (SCI 二区, IF=5.901, * 通讯作者)
- Chongyi Li, **Runmin Cong**‡, Chunle Guo, Hua Li, Chunjie Zhang, Feng Zheng, and Yao Zhao, "A parallel down-up fusion network for salient object detection in optical remote sensing images", *Neurocomputing*, 415, pp. 411-420, 2020. (SCI 二区, IF=4.438, ‡ 共同一作、通讯作者)

- Ning Yang, Qihang Zhong, Kun Li, **Runmin Cong***, Yao Zhao, and Sam Kwong, "A reference-free underwater image quality assessment metric in frequency domain", *Signal Processing: Image Communication*, 94, pp. 1-10, 2021. (SCI 三区, IF=2.779, * 通讯作者)
- Ping Han, Binbin Han, Xiaoguang Lu, **Runmin Cong***, and Dandan Sun, "Unsupervised classification of PolSAR images based on multi-level feature extraction", *International Journal of Remote Sensing*, 41(2), pp. 534-548, 2019. (SCI 三区, IF=2.976, * 通讯作者)
- Min Ni, Jianjun Lei, **Runmin Cong***, Kaifu Zheng, Bo Peng, and Xiaoting Fan, "Color-guided depth map super resolution using convolutional neural network", *IEEE Access*, 2, pp. 26666-26672, 2017. (SCI 二区, IF=3.745, * 通讯作者)
- Hongfa Wen, Chenggang Yan, Xiaofei Zhou, **Runmin Cong**, Yaoqi Sun, Bolun Zheng, Jiyong Zhang, Yongjun Bao, and Guiguang Ding, "Dynamic selective network for RGB-D salient object detection", *IEEE Transactions on Image Processing*, 30, pp. 9179-9192, 2021. (CCF A, SCI 一区, IF=9.340)
- Chongyi Li, Saeed Anwar, Junhui Hou, **Runmin Cong**, Chunle Guo, and Wenqi Ren, "Underwater image enhancement via medium transmission-guided multi-color space embedding", *IEEE Transactions on Image Processing*, 30, pp. 4985-5000, 2021. (CCF A, SCI 一区, IF=9.340)
- Chunjie Zhang, **Runmin Cong**, and Yao Zhao, "Structure decomposition of visual-semantic correlations for image classification with varied levels of supervision", *IEEE Transactions on Image Processing*, 2021. In Press. (CCF A, SCI 一区, IF=9.340)
- Yudong Mao, Qiuping Jiang, **Runmin Cong**, Wei Gao, Feng Shao, and Sam Kwong, "Cross-modality fusion and progressive integration network for saliency prediction on stereoscopic 3D images", *IEEE Transactions on Multimedia*, 2021. In Press. (SCI 二区, IF=6.051)
- Hua Li, Yuheng Jia, **Runmin Cong**, Sam Kwong, and Chuanbo Chen, "Superpixel segmentation based on spatially constrained subspace clustering", *IEEE Transactions on Industrial Informatics*, 17(11), pp. 7501-7512, 2021. (SCI 一区, IF=9.112)
- Junkang Hu, Qiuping Jiang, **Runmin Cong**, Wei Gao, and Feng Shao, "Two-Branch deep neural network for underwater image enhancement in HSV color space", *IEEE Signal Processing Letters*, 2021. In Press.
- Yawen Huang, Feng Zheng, **Runmin Cong**, Weilin Huang, Matthew R. Scott, and Ling Shao, "MCMT-GAN: Multi-task coherent modality transferable GAN for 3D brain image synthesis", *IEEE Transactions on Image Processing*, 29, pp. 8187-8198, 2020. (CCF A, SCI 一区, IF=9.340)
- Chongyi Li, Chunle Guo, Wenqi Ren, **Runmin Cong**, Junhui Hou, Sam Kwong, and Dacheng Tao, "An underwater image enhancement benchmark dataset and beyond", *IEEE Transactions on Image Processing*, 29, pp. 4376-4389, 2020. (CCF A, SCI 一区, IF=9.340, **ESI 高被引论文**)
- Chunle Guo, Chongyi Li, Jichang Guo, **Runmin Cong**, Huazhu Fu, and Ping Han, "Hierarchical features driven residual learning for depth map super-resolution", *IEEE Transactions on Image Processing*, 28(5), pp. 2545-2557, 2019. (CCF A, SCI 一区, IF=9.340)
- Chongyi Li, Jichang Guo, **Runmin Cong**, Yanwei Pang, and Bo Wang, "Underwater image enhancement by dehazing with minimum information loss and histogram distribution prior", *IEEE Transactions on Image Processing*, 25(12), pp. 5664-5677, 2016. (CCF A, SCI 一区, IF=9.340, **ESI 高被引论文**)
- Chongyi Li, Chunle Guo, Jichang Guo, Ping Han, Huazhu Fu, and **Runmin Cong**, "PDR-Net: Perception-inspired single image dehazing network with refinement", *IEEE Transactions on Multimedia*, 22(3), pp. 704-716, 2020. (SCI 二区, IF=6.051)
- Hua Li, Sam Kwong, Chuanbo Chen, Yuheng Jia, and **Runmin Cong**, "Superpixel segmentation based on square-wise asymmetric segmentation and structural approximation", *IEEE Transactions on Multimedia*, 21(10), pp. 2625-2637, 2019. (SCI 二区, IF=6.051)
- Mengxin Han, **Runmin Cong**, Xinyu Li, Huazhu Fu, and Jianjun Lei, "Joint spatial-spectral hyperspectral image classification based on convolutional neural network", *Pattern Recognition Letters*, 130, pp. 38-45, 2020. (SCI 三区, IF=3.255, **ESI 高被引论文**)
- Ling Du, Anthony T.S. Ho, and **Runmin Cong**, "Perceptual hashing for image authentication: A survey", *Signal Processing: Image Communication*, 81, pp. 1-23, 2020. (SCI 三区, IF=2.779)
- Chongyi Li, Jichang Guo, Chunle Guo, **Runmin Cong**, and Jiachang Gong, "A hybrid method for underwater

image correction", *Pattern Recognition Letters*, 94, pp. 62-67, 2017. (SCI 三区, IF=3.255)

- Chongyi Li, Jichang Guo, Bo Wang, **Runmin Cong**, Yan Zhang, and Jian Wang, "Single underwater image enhancement based on color cast removal and visibility restoration", *Journal of Electronic Imaging*, 25(3), pp. 1-16, 2016. (SCI 四区, IF=0.924)
- **丛润民**, 雷建军, 付华柱, 王文冠, 黄庆明, 牛力杰, "视频显著性检测研究进展", 软件学报, 29(8): 2527-2544, 2018. (CCF A, EI, **第十五届北京青年优秀科技论文**)
- **丛润民**, 张禹墨, 张晨, 李重仪, 赵耀, "深度学习驱动的水下图像增强与复原研究进展", 信号处理, 36(9): 1377-1389, 2020.

会议论文：

- Chen Zhang, **Runmin Cong***, Qinwei Lin, Lin Ma, Feng Li, Yao Zhao, and Sam Kwong, "Cross-modality discrepant interaction network for RGB-D salient object detection", *ACM International Conference on Multimedia (ACM MM)*, pp. 2094-2102, 2021. (CCF A, 多媒体领域顶级会议, * 通讯作者, VALSE'2021 Spotlight)
- Qi Tang, **Runmin Cong***, Ronghui Sheng, Lingzhi He, Dan Zhang, Yao Zhao, and Sam Kwong, "BridgeNet: A joint learning network of depth map super-resolution and monocular depth estimation", *ACM International Conference on Multimedia (ACM MM)*, pp. 2148-2157, 2021. (CCF A, 多媒体领域顶级会议, * 通讯作者)
- Dong Jing, Shuo Zhang, **Runmin Cong**, and Youfang Lin,"Occlusion-aware bi-directional guided network for light field salient object detection", *ACM International Conference on Multimedia (ACM MM)*, pp. 1692-1701, 2021. (CCF A, 多媒体领域顶级会议)
- Lingzhi He, Hongguang Zhu, Feng Li, Huihui Bai, **Runmin Cong**, Chunjie Zhang, Chunyu Lin, Meiqin Liu, and Yao Zhao, "Towards fast and accurate real-world depth super-resolution: Benchmark dataset and baseline", *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 9229-9238, 2021. (CCF A, 计算机视觉领域顶级会议, VALSE'2021 Spotlight)
- Qijian Zhang, **Runmin Cong**‡, Junhui Hou, Chongyi Li, and Yao Zhao, "CoADNet: Collaborative aggregation-and-distribution networks for co-Salient object detection", *Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS)*, pp. 1-12, 2020. (CCF A, 机器学习与计算神经科学领域顶级会议, ‡ 共同一作、通讯作者)
- Chongyi Li, **Runmin Cong**‡, Yongri Piao, Qianqian Xu, and Chen Change Loy, "RGB-D salient object detection with cross-modality modulation and selection", *European Conference on Computer Vision (ECCV)*, pp. 225-241, 2020. (计算机视觉领域顶级会议，‡ 共同一作、通讯作者)
- Feng Li†, **Runmin Cong**†, Huihui Bai, and Yifan He, "Deep interleaved network for image super-resolution with asymmetric co-attention", *International Joint Conference on Artificial Intelligence (IJCAI)*, pp. 534-543, 2020. (CCF A，人工智能领域顶级会议, † 共同一作)
- Chongyi Li, Huazhu Fu, **Runmin Cong***, Zechao Li, and Qianqian Xu, "NuI-Go: Recursive non-local encoder-decoder network for retinal image non-uniform illumination removal", *ACM International Conference on Multimedia (ACM MM)*, pp. 1478-1487, 2020. (CCF A, 多媒体领域顶级会议, * 通讯作者)
- Peisong Wen, Ruolin Yang, Qianqian Xu, Chen Qian, Qingming Huang, **Runmin Cong**, and Jianlou Si, "DMVOS: Discriminative matching for real-time video object segmentation", *ACM International Conference on Multimedia (ACM MM)*, pp. 2048-2056, 2020. (CCF A, 多媒体领域顶级会议)
- Chunle Guo, Chongyi Li, Jichang Guo, Chen Change Loy, Junhui Hou, Sam Kwong, and **Runmin Cong**, "Zero-reference deep curve estimation for low-light image enhancement", *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 1780-1789, 2020. (CCF A, 计算机视觉与模式识别领域顶级会议)
- Zuyao Chen, Qianqian Xu, **Runmin Cong**, and Qingming Huang, "Global context-aware progressive aggregation network for salient object detection", *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI)*, pp. 10599-10606, 2020. (CCF A, Oral Presentation, 人工智能领域顶级会议)
- Yonghua Zhang, Liang Li, **Runmin Cong**, Xiaojie Guo, Hui Xu, and Jiawan Zhang, "Co-saliency detection via hierarchical consistency measure", *IEEE International Conference on Multimedia & Expo (ICME)*, pp. 1-6, 2018. (CCF B, **Best Student Paper Runner-Up Award**)

授权专利

- 一种立体视觉显著性检测方法，专利号：ZL 201610244589.9
- 一种图间显著性检测方法，专利号：ZL 201710942099.0
- 一种深度图可靠性评价测度方法，专利号：ZL 201610242241.6
- 一种立体图像重定向方法，专利号：ZL 201610874827.4
- 一种迭代协同显著性检测方法，专利号：ZL 201711064083.0
- 一种协同显著性检测方法，专利号：ZL 201710942783.9
- 一种深度形状先验提取方法，专利号：ZL 201711065005.2
- 一种 RGBD 图像协同显著性检测方法，专利号：ZL 201810879724.6
- 一种深度视频快速帧内编码方法，专利号：ZL 201810317701.6
- 一种联合场景和运动多特征的视频行为聚类方法，专利号：ZL 201810962264.3
- 深度图超分辨率重建方法，专利号：ZL 201610727602.6
- 一种 2D 转 3D 深度估计方法，专利号：ZL 201610780883.1
- 一种立体图像匹配图计算方法，专利号：ZL 201610780786.2
- 一种基于最优化颜色修正和回归模型的水下图像复原方法，专利号：ZL 201610606187.9
- 一种屏幕内容与自然内容划分及快速编码方法，专利号：ZL 201611031480.3
- 一种基于虚拟视点绘制质量的深度图上采样方法，专利号：ZL 201610751851.9

学术服务

- **期刊编委 (Associate Editor):**
  - Signal, Image and Video Processing (SIVP, IF: 1.894), Since 2020
- **客座编辑:**
  - Special Issue on *Advanced Machine Learning Methodologies for Underwater Image and Video Processing and Analysis*
    IEEE Journal of Oceanic Engineering (JOE, IF: 3.554), 2021-2022
  - Special Issue on *Visual Information Processing for Underwater Images and Videos: Theories, Algorithms, and Applications*
    Signal Processing : Image Communication (SPIC, IF: 2.814), 2020-2021
  - Special Issue on *Depth-Related Processing and Applications in Visual Systems*
    Multimedia Tools and Applications (MTAP, IF: 2.101), 2020-2021
  - 多媒体信号的智能处理”专题 *(正刊)*, 信号处理 (中文核心期刊), 2020
- **会议组织:**
  - Special Session on *Recent Advance in Depth-Related Processing and Applications*
    IEEE International Conference on Multimedia & Expo (ICME) 2021
  - *Real DSR Challenge: Real World Depth Map Super-Resolution on the RGB-D-D Dataset*
    ACM International Conference on Multimedia Retrieval (ICMR) 2021
  - Special Session on *Multi-source Data Processing and Analysis: Models, Methods and Applications*
    APSIPA Annual Summit and Conference (APSIPA ASC) 2019
  - 青年专题论坛：多媒体智能编码、感知与表示, 中国多媒体大会 2020
  - 网站主席, 中国模式识别与计算机视觉大会 2021

学术活动

- **会员状态:**
  - IEEE 会员
  - ACM 会员、ACM SIGWEB 会员
  - APSIPA 图像、视频和多媒体委员会 IVM 委员
  - 北京图象图形学学会理事
  - 第六届 VALSE 执行领域主席 EAC

- 中国图象图形学学会青年工作委员会副秘书长
- 中国图象图形学学会高级会员、青年工作委员会委员、国际合作与交流工作委员会委员、机器视觉专业委员会委员、视觉大数据专业委员会委员、交通视频专业委员会委员
- 中国计算机学会会员、计算机视觉专业委员会委员、CCF 多媒体技术专业委员会委员
- 中国人工智能学会会员、深度学习专业委员会委员、模式识别专业委员会委员、青年工作委员会会员
- 中国电子学会会员、青年科学家俱乐部会员

- **特邀报告:**
  - 第十六届图像图形技术与应用学术会议 2021 (202106)
    汇报题目：深度信息驱动的增强与应用
  - CSIG 交通视频专委会会员报告 (202103)
    汇报题目：*The Journey to the SOD Family ——Trip 2020*
  - 江苏省人工智能大会 2020 - 图像处理与机器学习青年学者论坛 (202012)
    汇报题目：*The Journey to the SOD Family ——Trip 2020*
  - NeurIPS'20 MeetUp (202012)
    汇报题目：*CoADNet: Collaborative Aggregation-and-Distribution Networks for Co-Salient Object Detection*
  - 全国图象图形学学术会议 2020 - 优秀博士与青年学者论坛 (202006)
    汇报题目：当视觉显著性检测遇上多源数据类型：理论、模型与方法
  - 先进数据挖掘与应用国际会议 (ADMA 2018) - 优秀博士生论坛 (201811)
    汇报题目：*Visual Saliency Detection with Comprehensive Information*
- **期刊审稿:**
  - IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
  - International Journal of Computer Vision (IJCV)
  - IEEE Transactions on Image Processing (TIP)
  - IEEE Transactions on Industrial Electronics (TIE)
  - IEEE Transactions on Industrial Informatics (TII)
  - IEEE Transactions on Cybernetics (TCyb)
  - IEEE Transactions on Multimedia (TMM)
  - IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
  - IEEE Transactions on Geoscience and Remote Sensing (TGRS)
  - IEEE Transactions on Computational Imaging (TCI)
  - IEEE Transactions on Cognitive and Developmental Systems (TCDS)
  - IEEE Transactions on Systems, Man and Cybernetics: Systems (TSMC)
  - IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI)
  - ACM Transactions on Intelligent Systems and Technology (TIST)
  - ACM Transactions on Multimedia Computing Communications and Applications (TOMM)
  - IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)
  - IEEE Journal of Oceanic Engineering (JOE)
  - IEEE Geoscience and Remote Sensing Letters (GRSL)
  - Pattern Recognition
  - Neural Networks
  - IEEE Access
  - Neurocomputing
  - Image and Vision Computing
  - The Visual Computer
  - 电子学报
  - 工程科学学报
  - 中国图象图形学报

  - 信号处理
  - 天津大学学报
  - 雷达学报
- **学术会议领域主席/专题主席/程序委员会委员：**
  - Conference on Neural Information Processing Systems (NeurIPS) 2020, 2021
  - IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2021, 2022
  - IEEE International Conference on Computer Vision (ICCV) 2021
  - IEEE Conference on Machine Learning (ICML) 2021
  - ACM International Conference on Multimedia (ACM MM) 2020, 2021
  - International Joint Conference on Artificial Intelligence (IJCAI) 2020, 2021
  - AAAI Conference on Artificial Intelligence (AAAI) 2021, 2022
  - IEEE International Conference on Multimedia & Expo (ICME) 2020, 2021
  - Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC) 2019, 2020
  - Pacific Graphics (PG) 2018, 2020
  - IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 2018
  - Asian Conference on Pattern Recognition (ACPR) 2017
  - International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI) 2016
  - 中国模式识别与计算机视觉学术会议 (PRCV) 2021
  - 中国多媒体大会 (ChinaMM) 2020, 2021