张帆

**博士、教授、博士生导师**

**个人简介**

张帆，教授，博士生导师，北京化工大学人工智能中心常务副主任、信息学院科研副院长，国家一流本科专业“电子信息工程”建设点负责人，北京化工大学优秀教师。2008年毕业于中国科学院电子学研究所信号与信息处理专业，获工学博士学位。2010年自中科院博士后出站至北京化工大学工作至今，2014、2017年获国家留学基金委全额资助赴美国伊利诺伊大学香槟分校（UIUC）、德国德累斯顿工业大学（TUD）从事访学研究。在遥感技术领域，发表学术论文100余篇，主持国家自然科学基金等科研项目20余项。

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**教育背景**

|  |  |
| --- | --- |
| 2005.04-2008.06 | 中国科学院电子学研究所，信号与信息处理，博士 |
| 2002.09-2005.04 | 北京航空航天大学大学， 信号与信息处理，硕士 |
| 1998.09-2002.06 | 中国民航大学， 通信工程 学士 |

**工作经历**

|  |  |
| --- | --- |
| 2017.12-至今 | 北京化工大学，信息科学与技术学院，教授 |
| 2017.09-2017.12 | 德国德累斯顿工业大学，访问学者 |
| 2013.12-2015.01 | 美国伊利诺伊大学香槟分校，访问学者 |
| 2010.06-2017-11 | 北京化工大学，信息科学与技术学院，讲师、副教授、博导 |
| 2008.06-2010.06 | 中国科学院，电子学，博士后 |

**科研项目**

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| --- |
| (1) 国家自然科学基金面上项目：资源受限环境下基于深度递归学习的多角度SAR目标识别，2019-2022，(主持) |
| (2)国家自然科学基金青年项目：不规则问题驱动下的多维度SAR回波混合粒度并行模拟，2016-2018，(已结题) |
| (3)高分专项外协课题：高分辨率星载SAR多模式数据模拟研究，2013-2016，(已结题) |
| (4)北京市自然科学基金青年项目：面向交通监测的LTE信号外辐射源ISAR成像技术研究，2016-2017，(已结题) |
| (5)北京市青年英才计划：面向化工管道多相流检测的电容层析成像技术研究，2013-2016，(已结题) |

**研究方向**

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| * 极化SAR/高光谱图像分类 |
| * SAR/光学图像目标解译 |
| * SAR成像仿真 |
| * 计算机视觉 |

**研究生招生**

**博士招生**：本人常年招收博士研究生（直博/硕博连读/申请考核等)！欢迎电子信息工程/通信工程/计算机科学与技术/数学等相关专业的同学发邮件咨询！

学术博士：计算机技术与智能系统、人工智能

工程博士：待定

**硕士招生**：欢迎计算机科学与技术/人工智能/电子信息工程/通信工程等相关专业的同学保送、报考！

学术硕士：

* **信息与通信工程**（02图像解译与智能处理）
* **计算机科学与技术**（03图像智能信息处理算法研究）

专业硕士：

* **电子信息**（新一代电子信息技术-02遥感信息处理）
* **电子信息**（计算机技术-05图像智能信息处理算法研究）

**在读研究生**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 博士： |  |  |  |  |  |
| 2018： | 倪军 |  |  |  |  |
| 2019： | 唐嘉昕 |  |  |  |  |
| 2020： | 程建达 |  |  |  |  |
| 2021： | 刘颖冰 |  |  |  |  |
| 硕士： |  |  |  |  |  |
| 2019： | 曹卓越 | 闫敏超 | 蒙恬莹 | 李彤 | 高琼 |
| 2020： | 邓莎萨 | 王道昌 | 茹一鹏 | 陆圣涛 |  |
| 2021： | 喻亚萌 | 匡意 | 闫港 |  |  |

**毕业研究生**

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| --- | --- | --- | --- |
| **博士**： |  |  |  |
| 2022： | 倪军-中科院空天院 |  |  |
| **硕士**： |  |  |  |
| 2014： | 刘欢-天津审协 |  |  |
| 2015： | 万智鹏-百行征信 | 何雪-浙江联通 |  |
| 2016： | 胡辰-中科曙光 | 李国君-字节跳动 |  |
| 2017： | 苏丹丹-北京联通 | 唐明-欧菲智能车联 |  |
| 2018： | 汤晗媛-招银网络 | 姚晓杰-杭州公务员 |  |
| 2019： | 傅真珍-中冶京诚 |  |  |
| 2020： | 吴优-中电电科院 | 王云冲-中科曙光 | 金啸宇-北京锐安 |
| 2021： | 杜文瑞-北京泰康 | 赵晨茜-国防科大 | 黄恒华-上海展讯 |
|  |  |  |  |
| **本科**： |  |  |  |
| 2014： | 林一鸣-Facebook AI Research (伦敦) |  |  |
| 2015: | 李志鑫-Line (东京) |  |  |
| 2018： | 陈弘毅-卡内基梅隆大学(美国) |  |  |
| 2019： | 贾云哲-杜克大学(美国) |  |  |
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**论文/期刊**

**[极化SAR/高光谱图像分类]**

1. Ni J, **Zhang F\***, Yin Q, et al. Random neighbor pixel-block-based deep recurrent learning for polarimetric SAR image classification[J]. ***IEEE Transactions on Geoscience and Remote Sensing***, 2021, 59(9):7557-7569. (**Top**)
2. Cheng J, **Zhang F**, Xiang D, et al. PolSAR Image Classification With Multiscale Superpixel-Based Graph Convolutional Network[J]. ***IEEE Transactions on Geoscience and Remote Sensing***, 2021. (**Top**)
3. **Zhang F**, Yan M, Hu C, et al. Integrating Coordinate Features in CNN-Based Remote Sensing Imagery Classification[J]. ***IEEE Geoscience and Remote Sensing Letters***, 2021.
4. Yin Q, Xu J, Xiang D, Zhou Y, Zhang F. [Polarimetric Decomposition With an Urban Area Descriptor for Compact Polarimetric SAR Data](https://sc.panda321.com/citations?view_op=view_citation&hl=zh-CN&user=CujOi1kAAAAJ&sortby=pubdate&alert_preview_top_rm=2&citation_for_view=CujOi1kAAAAJ:bZtZ2VP7DRgC)[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2021.
5. Yin Q, Li J, Ma F, Xiang D, **Zhang F**. [Dual-Channel Convolutional Neural Network for Bare Surface Soil Moisture Inversion Based on Polarimetric Scattering Models](https://sc.panda321.com/citations?view_op=view_citation&hl=zh-CN&user=CujOi1kAAAAJ&sortby=pubdate&alert_preview_top_rm=2&citation_for_view=CujOi1kAAAAJ:oA8UEeFZdjYC)[J]. ***Remote Sensing***, 2021, 13(22): 4503. (**Top**)
6. Cheng J, **Zhang F**, Xiang D, et al. PolSAR Image Land Cover Classification Based on Hierarchical Capsule Network[J]. ***Remote Sensing***, 2021, 13(16): 3132. (**Top**)
7. Ni J, **Zhang F**, Ma F, et al. Random Region Matting for the High-Resolution PolSAR Image Semantic Segmentation[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2021, 14: 3040-3051.
8. Wang Y, Cheng J, Zhou Y, **Zhang F**, Yin Q. A Multichannel Fusion Convolutional Neural Network Based on Scattering Mechanism for PolSAR Image Classification[J]. ***IEEE Geoscience and Remote Sensing Letters***, 2021.
9. Yin Q, Wu Y, **Zhang F\***, et al. GPU-based soil parameter parallel inversion for PolSAR data[J]. ***Remote Sensing***, 2020, 12(3): 415. (**Top**)
10. Li Z, Ni J, **Zhang F\***, et al. Multi-GPU implementation of nearest-regularized subspace classifier for hyperspectral image classification[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2020, 13: 3534-3544.
11. Li H, Wang W, Ye S, Deng Y, **Zhang F**, Du Q. A mixture generative adversarial network with category multi-classifier for hyperspectral image classification[J]. ***Remote Sensing Letters***, 2020, 11(11): 983-992.
12. Yin Q, Cheng J, **Zhang F**, et al. Interpretable POLSAR image classification based on adaptive-dimension feature space decision tree[J]. ***IEEE Access***, 2020, 8: 173826-173837.
13. Yin Q, Hong W, **Zhang F\***, Eric P. Optimal combination of polarimetric features for vegetation classification in PolSAR image[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2019, 12(10): 3919-3931.
14. Ni J, **Zhang F\***, Yin Q, et al. Robust weighting nearest regularized subspace classifier for PolSAR imagery[J]. ***IEEE Signal Processing Letters***, 2019, 26(10): 1496-1500.
15. **Zhang F**, Ni J, Yin Q, et al. Nearest-regularized subspace classification for PolSAR imagery using polarimetric feature vector and spatial information[J]. ***Remote Sensing***, 2017, 9(11): 1114. (**Top**)
16. Pan L, Li H C, Deng Y J, **Zhang F**, et al. Hyperspectral dimensionality reduction by tensor sparse and low-rank graph-based discriminant analysis[J]. ***Remote Sensing***, 2017, 9(5): 452. (**Top**)
17. Li W, Wu G, **Zhang F**, et al. Hyperspectral image classification using deep pixel-pair features[J]. ***IEEE Transactions on Geoscience and Remote Sensing***, 2016, 55(2): 844-853. (**Top**)
18. Li W, Du Q, **Zhang F**, et al. Hyperspectral image classification by fusing collaborative and sparse representations[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2016, 9(9): 4178-4187.
19. Hu W, Huang Y, Wei L, **Zhang F**, et al. Deep convolutional neural networks for hyperspectral image classification[J]. ***Journal of Sensors***, 2015, 2015.
20. Li W, Du Q, **Zhang F**, et al. Collaborative-representation-based nearest neighbor classifier for hyperspectral imagery[J]. ***IEEE Geoscience and Remote Sensing Letters***, 2014, 12(2): 389-393.
21. Xiong M, **Zhang F**, Ran Q, et al. Representation-based classifications with Markov random field model for hyperspectral urban data[J]. ***Journal of Applied Remote Sensing***, 2014, 8(1): 085097.
22. Li Y, Yin Q, Wang Y, Lin Y, **Zhang F**, Hong W. Multi-aspect Polarimetric SAR Image Scattering Feature Information Coding and Classification with Machine Learning Approach[C]//EUSAR 2021; 13th European Conference on Synthetic Aperture Radar. VDE, 2021: 1-4.
23. Ni J, Jia Y, Yin Q, Zhou Y, **Zhang F**. Metric Learning Based Fine-Grained Classification for PolSAR Imagery[C]//IGARSS 2020-2020 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2020: 716-719.
24. Wu Y, Yin Q\*, **Zhang F**. GPU-Based Soil Parameter Parallel Inversion for PolSAR Imagery[C]//2019 6th Asia-Pacific Conference on Synthetic Aperture Radar (APSAR). IEEE, 2019: 1-5. (**Excellent Paper Award Second Prize**)
25. Zhang S, Yin Q, Ni J, **Zhang F**. PolSAR image classification with small sample learning based on CNN and CRF[C]//2019 6th Asia-Pacific Conference on Synthetic Aperture Radar (APSAR). IEEE, 2019: 1-5.
26. Yin Q, Hong W, **Zhang F**, et al. Analysis of polarimetric feature combination based on PolSAR image classification performance with machine learning approach[C]//IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2018: 8124-8127. (**Invited Talk**)

**[SAR/光学图像目标解译]**

1. Ma F, **Zhang F\***, Zhang W, et al. [Fast SAR Image Segmentation With Deep Task-Specific Superpixel Sampling and Soft Graph Convolution](https://sc.panda321.com/citations?view_op=view_citation&hl=zh-CN&user=CujOi1kAAAAJ&sortby=pubdate&alert_preview_top_rm=2&citation_for_view=CujOi1kAAAAJ:mYPvCrJ_kzAC)[J]. ***IEEE Transactions on Geoscience and Remote Sensing***, 2020. (**Top**)
2. Xiang D, **Zhang F**, Zhang W, et al. Fast pixel-superpixel region merging for SAR image segmentation[J]. ***IEEE Transactions on Geoscience and Remote Sensing***, 2020. (**Top**)
3. **Zhang F**, Liu Y, Zhou Y, et al. A lossless lightweight CNN design for SAR target recognition[J]. ***Remote Sensing*** ***Letters***, 2020, 11(5): 485-494.
4. Liu Y, Zhou Y, Zhou Y, Ma L, Wang B, **Zhang F**. Accelerating SAR Image Registration Using Swarm-Intelligent GPU Parallelization[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2020, 13: 5694-5703.
5. **Zhang F**, Fu Z, Zhou Y, et al. [Multi-aspect SAR target recognition based on space-fixed and space-varying scattering feature joint learning](https://sc.panda321.com/citations?view_op=view_citation&hl=zh-CN&user=CujOi1kAAAAJ&cstart=20&pagesize=80&sortby=pubdate&alert_preview_top_rm=2&citation_for_view=CujOi1kAAAAJ:moWhu9_CcosC)[J]. ***Remote Sensing*** ***Letters***, 2019, 10(10): 998-1007.
6. Liu C, Li HC, Fu K, Zhang F, Datcu M, Emery WJ. Bayesian estimation of generalized gamma mixture model based on variational em algorithm[J]. ***Pattern Recognition***, 2019, 87: 269-284. (**Top**)
7. Yue K, Yang L, Li R, Hu W, **Zhang F**, Li W. Treeunet: Adaptive tree cnns for subdecimeter aerial image segmentation[J]. ***ISPRS Journal of Photogrammetry and Remote Sensing***, 2019, 156:1-13. (**Top**)
8. Huang L, Li W, Chen C, **Zhang F**, et al. Multiple features learning for ship classification in optical imagery[J]. ***Multimedia Tools and Applications***, 2018, 77(11): 13363-13389.
9. Shi Q, Li W, **Zhang F**, et al. Deep CNN with multi-scale rotation invariance features for ship classification[J]. ***IEEE Access***, 2018, 6: 38656-38668.
10. **Zhang F**, Wang Y, Ni J, et al. SAR target small sample recognition based on CNN cascaded features and AdaBoost rotation forest[J]. ***IEEE Geoscience and Remote Sensing Letters***, 2019, 17(6): 1008-1012.
11. Li R, Liu W, Yang L, Sun S, Hu W, **Zhang F**, et al. DeepUNet: a deep fully convolutional network for pixel-level sea-land segmentation[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2018, 11(11): 3954-3962.
12. Chen H, **Zhang F\***, Tang B, et al. Slim and efficient neural network design for resource-constrained SAR target recognition[J]. ***Remote Sensing***, 2018, 10(10): 1618. (**Top**)
13. **Zhang F**, Hu C, Yin Q, et al. Multi-aspect-aware bidirectional LSTM networks for synthetic aperture radar target recognition[J]. ***IEEE Access***, 2017, 5: 26880-26891.
14. 金啸宇, 尹嫱, 倪军, 周勇胜, 张帆, 洪文. 一种基于场景合成和锚点约束的SAR目标检测网络, 南京信息工程大学学报, 2020, 12(2):210-215.
15. 王 璐, 张 帆\*, 李 伟, 谢晓明, 胡 伟. [基于Gabor滤波器和局部纹理特征提取的SAR目标识别算法](http://radars.ie.ac.cn/CN/article/showNewArticle.do), 雷达学报, 2015, 4(6), 658-665. (**《雷达学报》高被引论文**)
16. Tang J, **Zhang F**, Ma F, et al. [How SAR Image Denoise Affects the Performance of DCNN-Based Target Recognition Method](https://sc.panda321.com/citations?view_op=view_citation&hl=zh-CN&user=CujOi1kAAAAJ&sortby=pubdate&alert_preview_top_rm=2&citation_for_view=CujOi1kAAAAJ:LqrXEw5M15gC)[C]//IGARSS 2021 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2021.
17. Zhang F, Zhou Y, **Zhang F**, et al. [Small Vessel Detection Based on Adaptive Dual-Polarimetric Sar Feature Fusion and Attention-Enhanced Feature Pyramid Network](https://sc.panda321.com/citations?view_op=view_citation&hl=zh-CN&user=CujOi1kAAAAJ&sortby=pubdate&alert_preview_top_rm=2&citation_for_view=CujOi1kAAAAJ:7MdmnBSEV98C)[C]//IGARSS 2021 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2021.
18. Liu Y, **Zhang F**, Ma F, et al. Incremental Multitask SAR Target Recognition with Dominant Neuron Preservation[C]//IGARSS 2020-2020 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2020: 754-757.
19. Du W, **Zhang F**, Ma F, et al. Improving SAR Target Recognition with Multi-Task Learning[C]//IGARSS 2020-2020 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2020: 284-287. (**Oral**)
20. Huang H, **Zhang F**, Zhou Y, et al. High Resolution SAR image synthesis with hierarchical generative adversarial networks[C]//IGARSS 2019-2019 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2019: 2782-2785
21. Tang J, **Zhang F**, Zhou Y, et al. A fast inference networks for SAR target few-shot learning based on improved siamese networks[C]//IGARSS 2019-2019 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2019: 1212-1215.
22. Fu Z, **Zhang F**, Yin Q, et al. Small sample learning optimization for ResNet based SAR target recognition[C]//IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2018: 2330-2333.

**[SAR仿真成像]**

1. **Zhang F**, Zhao C, Han S, et al. GPU-Based Parallel Implementation of VLBI Correlator for Deep Space Exploration System[J]. ***Remote Sensing***, 2021, 13(6): 1226. (**Top**)
2. **Zhang F**, Yao X, Tang H, et al. Multiple mode SAR raw data simulation and parallel acceleration for Gaofen-3 mission[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2018, 11(6): 2115-2126.
3. **Zhang F**, Hu C, Li W, et al. Accelerating time-domain SAR raw data simulation for large areas using multi-GPUs[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2014, 7(9): 3956-3966.
4. Li Z, Su D, Zhu H, Li W, **Zhang F\***, et al. A fast synthetic aperture radar raw data simulation using cloud computing[J]. ***Sensors***, 2017, 17(1): 113.
5. **Zhang F**, Hu C, Li W, et al. A deep collaborative computing based SAR raw data simulation on multiple CPU/GPU platform[J]. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2016, 10(2): 387-399.
6. **Zhang F**, Li G, Li W, et al. Accelerating spaceborne SAR imaging using multiple CPU/GPU deep collaborative computing[J]. ***Sensors***, 2016, 16(4): 494.
7. **Zhang F**, Hu C, Wu P C, et al. Accelerating aerial image simulation using improved CPU/GPU collaborative computing[J]. ***Computers & Electrical Engineering***, 2015, 46: 176-189.
8. **Zhang F**, Li X, Liu H, et al. Three-dimensional terrain model multiview quality assessment considering human visual system[J]. ***Journal of Applied Remote Sensing***, 2015, 9(1): 097290.
9. **Zhang F**, Li G, Li W, et al. Multiband microwave imaging analysis of ionosphere and troposphere refraction for spaceborne SAR[J]. ***International Journal of Antennas and Propagation***, 2014, 2014.
10. Liang W, Jia Z, Qiu X, Hong J, Zhang Q, Lei B, **Zhang F**, et al. Polarimetric calibration of the GaoFen-3 mission using active radar calibrators and the applicable conditions of system model for radar polarimeters[J]. ***Remote Sensing***, 2019, 11(2): 176. (**Top**)
11. 胡辰, 张帆\*, 李国君, 李伟, 崔忠马. 基于冗余计算约简的环扫SAR回波多GPU快速模拟[J]. 雷达学报, 2016, 5(4): 434-443.
12. 汪丙南, 张帆, 向茂生. 基于混合域的 SAR 回波快速算法[J]. 电子与信息学报, 2011, 33(3): 690-695.
13. 汪丙南, 张帆, 向茂生. 基线抖动对干涉 SAR 相位的影响[J]. 遥感学报, 2010 (6): 1171-1181.
14. 张帆，汪丙南，向茂生. 基于SAR回波仿真的BAQ压缩性能研究[J]. 系统仿真技术, 2010, 01.
15. 张帆, 洪文. 基于计算机图形学的 SAR 图像几何畸变仿真[J]. 系统仿真学报, 2009 (9): 2503-2508.
16. 张帆, 白璐, 洪文, 等. 基于计算机图形学的干涉 SAR 成像几何仿真[J]. 系统仿真学报, 2009 (8): 2195-2200.
17. 张帆, 林殷, 洪文. 基于网格计算的 SAR 回波分布式仿真[J]. 系统仿真学报, 2008, 20(12): 3165-3170.
18. Ma L, Zhu Y, **Zhang F**, et al. Spaceborne repeat-pass interferometric synthetic aperture radar experimental evaluation for the GaoFen-3 satellite[C]//IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2018: 2168-2171.
19. **Zhang F**, Tang H, Yin Q, et al. Multiple mode SAR raw data simulation for GaoFen-3 mission evaluation[C]//2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS). IEEE, 2017: 2097-2100.
20. Yao X, **Zhang F**, Sun X, et al. Comparison of distributed GPU computing frameworks for SAR raw data simulation[C]//2017 IEEE International Geoscience and Remote Sensing Symposium . IEEE, 2017: 5225-5228. (**Oral**)
21. Tang H, Li G, **Zhang F**, et al. A spaceborne SAR on-board processing simulator using mobile GPU[C]//2016 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2016: 1198-1201.
22. Yao X, Hu C, **Zhang F**, et al. Atomic-free optimization on GPU based SAR raw data simulation[C]//2016 IEEE International Geoscience and Remote Sensing Symposium (IGARSS). IEEE, 2016: 645-648.
23. Hu C, **Zhang F**, Ma L, et al. Efficient SAR raw data parallel simulation based on multicore vector extension[C]//2015 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2015: 4719-4722.
24. Li G, **Zhang F**, Ma L, et al. Accelerating SAR imaging using vector extension on multi-core SIMD CPU[C]//2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS). IEEE, 2015: 537-540.
25. Li G, **Zhang F**, Liu H, et al. Effect of ionosphere refraction on spaceborne SAR imaging precision[C]//2013 IEEE International Geoscience and Remote Sensing Symposium-IGARSS. IEEE, 2013: 330-333.
26. Li H, **Zhang F**, Hu W. GPU rasterization based octree fast generation algorithm for terrain modeling[C]//2013 IEEE International Geoscience and Remote Sensing Symposium-IGARSS. IEEE, 2013: 282-285. (**Oral**)
27. **Zhang F**, Wang B, Xiang M. Accelerating InSAR raw data simulation on GPU using CUDA[C]//2010 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2010: 2932-2935.
28. **Zhang F**, Wang B, Xiang M. Accelerating InSAR raw data simulation on GPU using CUDA[C]//2010 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2010: 2932-2935.
29. Wang B, **Zhang F**, Maosheng X. SAR raw signal simulation based on GPU parallel computation[C]//2009 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2009, 4: IV-617-IV-620.
30. **Zhang F**, Hong W, Li D. SAR image simulation of man-made scenes based on computer graphics[C]//IGARSS 2008-2008 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2008, 4: IV-1395-IV-1397.
31. **Zhang F**, Honw W. Analysis of squint angle in point target assessment[C]//2006 CIE International Conference on Radar. IEEE, 2006: 1-4.
32. **Zhang F**, Hu C, Yin Q, et al. A GPU based memory optimized parallel method for FFT implementation[J]. arXiv preprint arXiv:1707.07263, 2017.

**[计算机视觉]**

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**专著和专利**

**专著**：

Radar Systems: Technology, Principles and Applications (Chapter 6), Nova Science Publishers, 2013. (ISBN:978-1-62417-872-6)

**专利**：

合成孔径雷达成像数据三维显示方法. ZL201310722014.X

基于深度协同的合成孔径雷达回波并行模拟方法. ZL201610500585.2

基于极化特征的自适应维度决策树分类方法. ZL201811489586.7

**教学工作**

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| 承担本科生课程： | 承担研究生课程： |
| * 《人工智能导论》 | * 《CUDA并行计算》 |
| * 《信号与系统》 |  |
| * 《软件技术基础》 |  |

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**学术活动**

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| 2018 11th International Congress on Image and Signal Processing, BioMedical Engineering and Informatics | 组委会主席 |
| 2019 IEEE ICSIDP | 特邀报告:《Multi-aspect SAR Target Recognition based on Deep Recurrent Learning in Resource-constrained Environments》 |
| 2020 中国电子学会DSP专委会学术年会 | 特邀报告:《Multi-aspect SAR Target Recognition based on Deep Recurrent Learning in Resource-constrained Environments》 |
| 2021 中国光学工程学会 雷达信号处理及应用研讨会 | 特邀报告:《星载SAR星地一体化仿真》 |
| 2021 中国电子学会DSP专委会学术年会 | 特邀报告:《星载SAR星地一体化仿真》 |

**获奖与荣誉**

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| 北京化工大学优秀教师，2020年 |
| 北京化工大学优秀青年主讲教师，2018年 |
| 北京化工大学就业工作先进个人，2017年 |
| 北京化工大学优秀班主任，2013 |
| 北京化工大学信息学院教职工乒乓球比赛，冠军，2013年 |
| 北京化工大学工会积极分子，2013年 |
| 第一届“航天星图杯”高分图像解译大赛《高分辨率SAR图像切片的典型地物目标分类》，季军，2017年 |
| 第二届“航天星图杯”高分图像解译大赛《SAR图像中建筑物目标自动提取》，**冠军**，2018年 |
| 第二届“航天星图杯”高分图像解译大赛《高分辨率可见光图像精细化标注》，**冠军**，2018年 |
| 第三届“中科星图杯”高分图像解译大赛《全极化SAR图像中地物要素自动分类》，亚军，2019年 |
| 第四届“中科星图杯”高分图像解译大赛《全极化SAR图像中地物要素自动分类》，**冠军**，2020年 |
| 第四届“中科星图杯”高分图像解译大赛《高分辨率可见光图像精细化标注》，**冠军**，2020年 |
| 世界大学生超算比赛，二等奖（指导教师），2017年 |