



博士生导师

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博士生导师



姓名: 宋红

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○ 个人信息

宋红, 博士, 北京理工大学计算机学院教授, 博士生导师, 1995-2004年就读于北京理工大学计算机科学技术学院, 分获工学学士学位和工学博士学位。2017.12-2018.6在美国Drexel University 做高级研究学者, 2008.9-2009.9在美国Columbia University和Texas A&M University做访问学者, 交流学习。主要研究方向为: 图像处理, 医学影像分析与建模, 基于人工智能的疾病辅助诊断, 手术规划与预后评估平台的相关技术研究, 模式识别与机器学习。主持国家自然科学基金3项、科技部重点研发计划专项课题1项、国家863计划项目3项、总装预研基金1项、教育部博士点新教师基金、留学回国人员科研启动基金等科研项目3项, 发表学术论文50余篇。

个人主页: <http://www.arimed.cn>

○ 科研方向

图像处理, 医学影像分析与建模, 基于人工智能的疾病辅助诊断, 手术规划与预后评估平台的相关技术研究, 模式识别与机器学习。

○ 代表性学术成果

期刊论文:

- [1] Shuang Song, Chenbing Du, Danni Ai, Yong Huang, Hong Song, Yongtian Wang, JianYang*, Spatio-temporal Constrained Online Layer Separation for Vascular Enhancement in X-ray Angiographic Image Sequence, IEEE Transactions on Circuits and Systems for Video Technology. (in press)
- [2] Danni Ai, Dingkun Liu, Yifan Wang, Tianyu Fu, Yong Huang, Yurong Jiang, Song Hong, Yongtian Wang, Jian Yang*, Non-rigid Registration for Tracking Incompressible Soft Tissues with Sliding Motion, Medical Physics, DOI:10.1002/mp.13694, 2019.
- [3] Jingfan Fan, Jian Yang*, Yachen Wang, Siyuan Yang, Danni Ai, Yong Huang, Hong Song, Yongtian Wang, Dinggang Shen, Deep Feature Descriptor Based Hierarchical Dense Matching for X-ray Angiographic Images, Computer Methods and Programs in Biomedicine, 175:233-242, 2019.
- [4] Jingliang Zhao, Jian Yang*, Danni Ai, Hong Song, Yurong Jiang, Yong Huang, Luosha Zhang, Yongtian Wang, Automatic Retinal Vessel Segmentation Using Multi-scale Superpixel Chain Tracking, Digital Signal Processing, 2018.
- [5] Chan Wu, Jian Yang, Jianjun Zhu, Weijian Cong, Danni Ai, Hong Song, Xiaohui Liang, Yongtian Wang, Hybrid Constraint Optimization for 3D Subcutaneous Vein Reconstruction by Near-infrared Images, Computer Methods and Programs in Biomedicine, 163:123-133, 2018.
- [6] Huihui Fang, Jian Yang*, Jianjun Zhu, Danni Ai, Yong Huang, Yurong Jiang, Hong Song, Yongtian Wang, Greedy Graph Searching for Vascular Tracking in Angiographic Image Sequences, arXiv, Identifier:1805.09940, 2018.
- [7] Xinxin Liu, Jian Yang*, Shuang Song, Weijian Cong, Peifeng Jiao, Hong Song, Danni Ai, Yurong Jiang, Yongtian Wang, Sparse Intervertebral Fence Composition for 3D Cervical Vertebra Segmentation, Physics in Medicine and Biology, 63: 115010, 2018.

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谭毓安
王国仁
王立志
王树良
吴心筱
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薛静锋
杨晨
杨松
张磊
张美慧
赵清杰
郑军
祝烈煌

[8] Xinxin Liu, Jian Yang*, Shuang Song, Hong Song, Danni Ai, Yurong Jiang, Yongtian Wang, Multi-Layer Cube Sampling for Liver Boundary Detection in PET-CT Images, Australasian Physical & Engineering Sciences in Medicine, DOI: 10.1007/s13246-018-0650-y, 2018.

[9] Jianjun Zhu, Jian Yang*, Jingfan Fan, Danni Ai, Yurong Jiang, Hong Song, Yongtian Wang, Accurate Measurement of Granary Stockpile Volume Based on Fast Registration of Multi-station Scans, Remote Sensing Letters, 10.1080/2150704X.2018.1452060, 2018.

[10] Tianyu Fu, Qin Li, Jianjun Zhu, Danni Ai, Yong Huang, Hong Song, Yurong Jiang, Yongtian Wang, Jian Yang*, Sparse Deformation Prediction using Markov Decision Processes (MDP) for Non-rigid Registration of MR Image, Computer Methods and Programs in Biomedicine, 162:47-59, 2018.

[11] Songyuan Tang, Weijian Cong, Jian Yang, Tianyu Fu, Hong Song, Danni Ai and Yongtian Wang, Local Statistical Deformation Models for Deformable Image Registration, Neuro computing, DOI: 10.1016/j.neucom.2018.03.039, 2018.

[12] Jingfan Fan, Jian Yang*, Chan Wu, Danni Ai, Hong Song, Aimin Hao and Yongtian Wang, Multiple Features Decomposition for Subcutaneous Vein Extraction and Measurement, IEEE Access, DOI: 10.1109 /ACCESS.2018. 27994232018, 2018.

[13] Song Hong, Chen Lei, Gao Ruiqi, Jian Yang, Automatic schizophrenic discrimination on fNIRS by using complex brain network analysis and SVM, BMC Medical Informatics and Decision Making.2017.12

[14] Hong Song*, Wei Kang, Qian Zhang, Shuliang Wang, Kidney segmentation in CT sequences using SKFCM and improved GrowCut algorithm, BMC Systems Biology, Volume 9, Suppl 5.2015.

[15] Hong Song*, Qingjie Zhao, Yinghong Liu. Splitting touching cells based on concave-point and improved watershed algorithms. Frontiers of Computer Science. 8 (1) , 156-162, 2014.

[16] Song Hong*, Li Jiajia, Wang Shuliang, Ma Jingting. Multi-modality liver image registration based on multilevel B-splines free-form deformation and L-BFGS optimal algorithm. Journal of Central South University. 21(1), 287-292, 2014.

[17] Hong Song*, Weilong Du, Automatic Depression Discrimination on FNIRS by using FastICAWPD and SVM, Lecture Notes in Electrical Engineering, 2015

[18] Hong Song*, Jie Lv, He Liu. A Face Replacement System Based on 3D Face Model, Lecture Notes in Electrical Engineering, 2015

[19] Hong Song*, Feifei Sun, Xiangfei Cui, Breast Tissue Segmentation using KFCM Algorithm on MR images, Lecture Notes in Electrical Engineering, Vol. 256, 555-563. 2013.

[20] Hong Song*, Xiangfei Cui, and Feifei Sun, Breast Tissue 3D Segmentation and Visualization on MRI, International Journal of Biomedical Imaging, 2013.

会议论文:

[1] Haipeng Wan, Hong Song, Lei Chen, Jian Yang, Dorsal Hand Vein Recognition Based On Convolutional Neural Networks, 2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), 2017.12, USA

[2] Torecan Celik, Hong Song, Lei Chen, Jian Yang, Automatic Liver Segmentation on CT Images, ICSINC 2017, 2017.12

[3] Hong Song, Qiang Li, Shixiong Li, Classification of Patients with Disorder of Consciousness Based on DTI Sequence Analysis, IEEE Smart Cloud 2017.2017.12

[4] Hong Song*, Iordachescu Ilie Mihaita Bogdan, Shuliang Wang, Wentian Dong, Wenxiang Quan, Weimin Dang, Xin Yu, Automatic Schizophrenia Discrimination on fNIRS by Using PCA and SVM, 2016 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Shenzhen, China, 2016.12.15 -2016.12.18

[5] Zuxing Gu, Hong Song, Yu Jiang, Jeonghane Choi, Hongjiang He, Lui Sha, Ming Gu, An Integrated Medical CPS for Early Detection of Paroxysmal Sympathetic Hyperactivity, 2016 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Shenzhen, China, 2016.12.15-2016.12.18

[6] Hong Song*, Jie Lv, Yanming Wang, Rapid 3D face modeling from video, Pacific-Rim Conference on Multimedia (PCM) 2015, Korea

[7] Hong Song*, Qian Zhang, Shuliang Wang, Liver segmentation based on SKFCM and Improved GrowCut for CT images, International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2014), 2014, Belfast, the United Kingdom.

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[9] Hong Song*, Feifei Sun, Xiangfei Cui, Automatic Breast Tissue Segmentation on MR images using KFCM with spatial constraints, The 2013 IEEE International Conference on Granular Computing (IEEE Grc2013), 2013

专利:

[1] 宋红, 王新磊, 一种基于特征跟踪的人脸图像序列生成方法及装置, 2018.10.19, 中国, ZL201610072412.5

[2] 金福生, 安婧雯, 宋红, 基于平面的微纳物体图像倾斜校正方法, 2015.6.10, 中国, ZL201210457891.4

- [3] 宋红, 崔玉涛, 王祺, 杨健, 艾丹妮, 一种髌关节骨性髌臼角度的检测方法, 2018.3.13, 中国, 2018102049627
- [4] 宋红, 崔玉涛, 颜振松, 杨健, 艾丹妮, 驾驶员疲劳检测方法及系统, 2018.3.20, 中国, 2018102314209
- [5] 艾丹妮, 刘定坤, 杨健, 王涌天, 付天宇, 武潺, 宋红, 消融手术治疗效果的评估方法和装置, 2019.2.21, 中国, 2018116220071
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○ 承担科研情况

1. 国家自然科学基金项目“基于图像语义分析的自动人脸替换研究” (负责人)
 2. 国家自然科学基金项目“个性化乳腺形变建模与仿真方法研究” (负责人)
 3. 国家自然科学基金项目“个性化肝脏肿瘤射频消融术前规划系统关键技术研究” (负责人)
 4. 科技部重点研发计划课题“多模态影像引导精准、高效导航核心技术研发” (负责人)
 5. 教育部博士点青年教师基金项目“面向对象多内核处理器的离线模拟平台研究” (负责人)
 6. 863项目“数据分析” (负责人)
 7. 总装预研项目“目标检测” (负责人)
 8. 总装备部预研项目“模拟仿真系统” (负责人)
 9. 北京理工大学基础研究基金“肝脏肿瘤射频消融手术规划系统关键技术研究” (负责人)
 10. 企业合作项目“红外图像压缩与解压缩系统设计与实现” (负责人)
 11. 国家自然科学基金项目“引入昆虫复视机制的粒子滤波算法及其视觉伺服应用研究” (骨干成员)
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○ 所获奖励

- 教育部 - IBM精品课程项目《SOA原理及实践》(排名1)
- 国家级双语示范课程项目《C Programming Language》(排名1)
- 2012北京市教学成果一等奖(排名4)
- “Talent2000专用集成电路高层次自动设计系统”2004年获部级二等奖和校级一等奖
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○ 社会兼职

计算机学会会员, 人工智能学会会员, 中国人工智能学会智能服务专业委员会委员, CMPB、电子学报、BIBM等国际学术期刊/会议审稿人; 国家自然科学基金、博士后基金评审专家; 教育部学位评估中心论文评审专家。

○ 备注

实验室目前招收博士生、硕士生和高年级本科生, 有意者请邮件联系!
