Jinzheng Cai

CONTACT INFORMATION

PAII Inc. 6720B Rockledge Drive Suite 410, Bethesda, MD, 20817
Phone: 352-226-1667
E-mail: caijinzhengcn@gmail.com
Homepage, Google Scholar, LinkedIn, GitHub

EDUCATION

University of Florida, Gainesville, Florida, United States
Ph.D. Student & Candidate, Department of Biomedical Engineering 2015 - 2019
Advisor: Prof. Lin Yang, Email: linyang711@gmail.com

Tsinghua University, Haidian, Bejing, China
Ph.D. Student, School of Aerospace Engineering 2013 - 2015
Advisor: Prof. Youzheng Wang

Fudan University, Yangpu, Shanghai, China
Bachelor of Engineering, Department of Biomedical Engineering 2009 - 2013
Advisor: Prof. Yu Ma

EXPERIENCE

PAII Inc. Bethesda, Maryland, United States
Senior research scientist for medical image analysis with deep learning 2019 June - present
Manager: Dr. Le Lu, Email: tiger.lelu@gmail.com

NVIDIA Corp. Bethesda, Maryland, United States
Research intern for medical image analysis with deep learning 2018 May - 2018 August
Manager: Dr. Holger Roth, Email: hroth@nvidia.com
Manager: Dr. Le Lu, Email: tiger.lelu@gmail.com

Clinical Center, National Institute of Health Bethesda, Maryland, USA
Predoctrol Trainee, Imaging Biomarkers and Computer-Aided Diagnosis Laboratory 2017
Advisor: Dr. Le Lu, Email: tiger.lelu@gmail.com
Advisor: Ronald M. Summers, M.D., Ph.D., Email: rsummers@cc.nih.gov

SELECTED PUBLICATIONS

Book Chapter

1. Jin, Dakai, Adam P. Harrison, Ling Zhang, Ke Yan, Yirui Wang, **Jinzheng Cai**, Shun Miao, and Le Lu. "Artificial intelligence in radiology." In Artificial Intelligence in Medicine, pp. 265-289. Academic Press, 2020.

2. **Cai, Jinzheng**, Le Lu, Fuyong Xing, and Lin Yang. "Pancreas Segmentation in CT and MRI via Task-Specific Network Design and Recurrent Neural Contextual Learning." In Deep Learning and Convolutional Neural Networks for Medical Imaging and Clinical Informatics, pp. 3-21. Springer, Cham, 2019.

Full-Length Peer-Reviewed Journal Papers

1. **Cai, Jinzheng**, Adam P. Harrison, Youjing Zheng, Ke Yan, Yuankai Huo, Jing Xiao, Lin Yang, and Le Lu. "Lesion-Harvester: Iteratively Mining Unlabeled Lesions and Hard-Negative Examples at Scale," in IEEE Transactions on Medical Imaging, doi: 10.1109/TMI.2020.3022034, 2020. **Impact factor=9.710**

2. Xia, Yingda, Dong Yang, Zhiding Yu, Fengze Liu, **Jinzheng Cai**, Lequan Yu, Zhuotun Zhu, Daguang Xu, Alan Yuille, and Holger Roth. "Uncertainty-aware multi-view co-training for semi-supervised medical image segmentation and domain adaptation." Medical Image Analysis 65 (2020): 101766. **Impact factor=11.148**

3. **Cai, Jinzheng**, Zizhao Zhang, Lei Cui, Yefeng Zheng, and Lin Yang. "Towards cross-modal organ translation and segmentation: a cycle-and shape-consistent generative adversarial network." Medical image analysis 52 (2019): 174-184. **Impact factor=8.880**

4. **Cai, Jinzheng**, Fuyong Xing, Abhinandan Batra, Fujun Liu, Glenn A. Walter, Krista Vandenborne, and Lin Yang. "Texture analysis for muscular dystrophy classification in MRI with improved class activation mapping." Pattern recognition 86 (2019): 368-375. **Impact factor=5.898**

5. Shi, Xiaoshuang, Zhenhua Guo, Fuyong Xing, **Jinzheng Cai**, and Lin Yang. "Self-learning for face clustering." Pattern Recognition 79 (2018): 279-289. **Impact factor=5.898**

6. Zhang, Zizhao, Pingjun Chen, Mason McGough, Fuyong Xing, Chunbao Wang, Marilyn Bui, Yuanpu Xie et al. "Pathologist-level interpretable whole-slide cancer diagnosis with deep learning." Nature Machine Intelligence 1, no. 5 (2019): 236-245.

Full-Length Peer-Reviewed Conference Papers

1. **Cai, Jinzheng**, Ke Yan, Chi-Tung Cheng, Jing Xiao, Chien-Hung Liao, Le Lu, and Adam P. Harrison. "Deep Volumetric Universal Lesion Detection Using Light-Weight Pseudo 3D Convolution and Surface Point Regression." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 3-13. Springer, Cham, 2020.

2. Ashwin Raju, Chi-Tung Cheng, Yunakai Huo, **Jinzheng Cai**, Junzhou Huang, Jing Xiao, Le Lu, ChienHuang Liao, Adam P Harrison, (2020) Co-heterogeneous and Adaptive Segmentation from Multi-source and Multi-phase CT Imaging Data: A Study on Pathological Liver and Lesion Segmentation. In: Vedaldi A., Bischof H., Brox T., Frahm JM. (eds) Computer Vision – ECCV 2020. ECCV 2020. Lecture Notes in Computer Science, vol 12368. Springer, Cham. https://doi.org/10.1007/978-3-030-58592-1_27

3. Fengze Liu, **Jinzheng Cai**, Yuankai Huo, Chi-Tung Cheng, Ashwin Raju, Dakai Jin, Jing Xiao, Alan Yuille, Le Lu, ChienHung Liao, Adam P. Harrison. (2020) JSSR: A Joint Synthesis, Segmentation, and Registration System for 3D Multi-modal Image Alignment of Large-Scale Pathological CT Scans. In: Vedaldi A., Bischof H., Brox T., Frahm JM. (eds) Computer Vision – ECCV 2020. ECCV 2020. Lecture Notes in Computer Science, vol 12358. Springer, Cham. https://doi.org/10.1007/978-3-030-58601-0_16

4. Chao, Chun-Hung, Zhuotun Zhu, Dazhou Guo, Ke Yan, Tsung-Ying Ho, **Jinzheng Cai**, Adam P. Harrison et al. "Lymph Node Gross Tumor Volume Detection in Oncology Imaging via Relationship Learning Using Graph Neural Network." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 772-782. Springer, Cham, 2020.

5. Raju, Ashwin, Zhanghexuan Ji, Chi Tung Cheng, **Jinzheng Cai**, Junzhou Huang, Jing Xiao, Le Lu, ChienHung Liao, and Adam P. Harrison. "User-Guided Domain Adaptation for Rapid Annotation from User Interactions: A Study on Pathological Liver Segmentation." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 457-467. Springer, Cham, 2020.

6. Xia, Yingda, Fengze Liu, Dong Yang, **Jinzheng Cai**, Lequan Yu, Zhuotun Zhu, Daguang Xu, Alan Yuille, and Holger Roth. "3D semi-supervised learning with uncertainty-aware multi-view co-training." In The IEEE Winter Conference on Applications of Computer Vision, pp. 3646-3655. 2020.

7. Yao, Jiawen, **Jinzheng Cai**, Dong Yang, Daguang Xu, and Junzhou Huang. "Integrating 3D Geometry of Organ for Improving Medical Image Segmentation." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 318-326. Springer, Cham, 2019.

8. Su, Hai, Xiaoshuang Shi, **Jinzheng Cai**, and Lin Yang. "Local and Global Consistency Regularized Mean Teacher for Semi-supervised Nuclei Classification." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 559-567. Springer, Cham, 2019.

9. **Cai, Jinzheng**, Yingda Xia, Dong Yang, Daguang Xu, Lin Yang, and Holger Roth. "End-to-End Adversarial Shape Learning for Abdomen Organ Deep Segmentation." In International Workshop on Machine Learning in Medical Imaging, pp. 124-132. Springer, Cham, 2019.

10. **Cai, Jinzheng**, Le Lu, Adam P. Harrison, Xiaoshuang Shi, Pingjun Chen, and Lin Yang. "Iterative attention mining for weakly supervised thoracic disease pattern localization in chest x-rays." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 589-598. Springer, Cham, 2018.

11. **Cai, Jinzheng**, Youbao Tang, Le Lu, Adam P. Harrison, Ke Yan, Jing Xiao, Lin Yang, and Ronald M. Summers. "Accurate weakly-supervised deep lesion segmentation using large-scale clinical annotations: Slice-propagated 3d mask generation from 2d RECIST." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 396-404. Springer, Cham, 2018.

12. Tang, Youbao, **Jinzheng Cai**, Le Lu, Adam P. Harrison, Ke Yan, Jing Xiao, Lin Yang, and Ronald M. Summers. "CT image enhancement using stacked generative adversarial networks and transfer learning for lesion segmentation improvement." In International Workshop on Machine Learning in Medical Imaging, pp. 46-54. Springer, Cham, 2018.

13. Liu, Jiamin, **Jinzheng Cai**, Karthik Chellamuthu, Mohammadhadi Bagheri, Le Lu, and Ronald M. Summers. "Cascaded coarse-to-fine convolutional neural networks for pericardial effusion localization and segmentation on CT scans." In 2018 IEEE 15th international symposium on biomedical imaging (ISBI 2018), pp. 1092-1095. IEEE, 2018.

14. **Cai, Jinzheng**, Le Lu, Yuanpu Xie, Fuyong Xing, and Lin Yang. "Pancreas segmentation in MRI using graph-based decision fusion on convolutional neural networks." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 674-682. Springer, Cham, 2017.

15. **Cai, Jinzheng**, Le Lu, Zizhao Zhang, Fuyong Xing, Lin Yang, and Qian Yin. "Pancreas segmentation in MRI using graph-based decision fusion on convolutional neural networks." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 442-450. Springer, Cham, 2016.

16. Xing, Fuyong, Xiaoshuang Shi, Zizhao Zhang, **Jinzheng Cai**, Yuanpu Xie, and Lin Yang. "Transfer shape modeling towards high-throughput microscopy image segmentation." In International Conference on Medical Image Computing and Computer-Assisted Intervention, pp. 183-190. Springer, Cham, 2016.

17. Shi, Xiaoshuang, Fuyong Xing, **Jinzheng Cai**, Zizhao Zhang, Yuanpu Xie, and Lin Yang. "Kernel-based supervised discrete hashing for image retrieval." In European Conference on Computer Vision, pp. 419-433. Springer, Cham, 2016.

Conference Abstracts

1. Teng, Wei, Chi-Tung Cheng, **Jinzheng Cai**, Yu-Chao Wang, Le Lu, Chun-Nan Yeh, Chun-Yen Lin et al. "Automatic Hepatocellular Carcinoma Detection in Non-contrast and Venous Computed Tomography of Cirrhotic Patients-A Three Dimensional Deep Learning Based Approach." In Hepatology, vol. 72, pp. 84A-84A. 111 River St, Hoboken 07030-5774, NJ USA: Wiley, 2020.

2. Hai, Su, Manish Sapkota, Fujun Liu, **Jinzheng Cai**, Pingjun Chen, and Lin Yang. "Nucleus Detection and Segmentation for Pathology Images Using Deep Convolutional Neural Network and Variational Autoencoder." In LABORATORY INVESTIGATION, vol. 98, pp. 66-66. 75 VARICK ST, 9TH FLR, NEW YORK, NY 10013-1917 USA: NATURE PUBLISHING GROUP, 2018.

3. Xie, Yuanpu, Pingjun Chen, **Jinzheng Cai**, Fuyong Xing, and Lin Yang. "Efficient and Robust Cell Segmentation in Breast Microscopy Image using Fully Convolutional Neural Network with Multi-Context Aggregation." In LABORATORY INVESTIGATION, vol. 98, pp. 113-113. 75 VARICK ST, 9TH FLR, NEW YORK, NY 10013-1917 USA: NATURE PUBLISHING GROUP, 2018.

For more detail of my publications, please visit my Google Scholar.

EDITORIAL SERVICES

Pioneer Reviewer of Journals

- IEEE Transactions on Medical Imaging (TMI, impact factor 9.710): 2020.
- IEEE Journal of Biomedical And Health Informatics (JBHI, impact factor 5.223): 2020.
- Medical Image Analysis (MEDIA, impact factor 8.880): 2019.
- Cancer Science & Research Open Access (CSROA, impact factor 0.500): 2019.

- Pattern Recognition (PR, impact factor 5.898): 2018.

Pioneer Reviewer of Conferences

- The IEEE Conference on Computer Vision and Pattern Recognition (CVPR): 2019.
- The IEEE International Conference on Computer Vision (ICCV): 2019.
- The International Conference on Medical Image Computing and Computer Assisted Interventions (MICCAI): 2016,2017,2018,2019,2020.
- The IEEE International Symposium on Biomedical Imaging (ISBI): 2018.
- The Proceedings of the Neural Information Processing Systems (NIPS) Conference: 2016.