

Zeju Li

Ph.D. Student at Imperial College London

🏠 180 Queen's Gate, London SW7 2AZ

✉ zeju.li18@imperial.ac.uk

☎ +447704880600

🌐 <https://zerojumpline.github.io/>

🐦 @li_zeju



Research Interests

Medical Image Computing, Computer Vision and Machine Learning

- Primary area 📌 Generalization in Deep Learning for Medical Imaging.
- Secondary area 📌 Meta Learning, Data Augmentation, Image Segmentation, Image Restoration.

Research Experience

- Sep 18 – 📌 **Research Student.** Department of Computing, Imperial College London, London, United Kingdom.
Advisor: Dr. Ben Glocker and Prof. Daniel Rueckert
He is working on improving the generalization capability of neural networks for medical imaging.
- Jul 19 – 📌 **Research Intern.** Noah's Ark Lab, Huawei, London, United Kingdom.
Mentor: Dr. Greg Slabaugh
He is working on low-level image processing based on network architecture search.
- Jul 18 – Sep 18 📌 **Research Intern.** Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China.
Mentor: Prof. Shaohua Kevin Zhou and Dr. Hu Han
He worked on embedding CT knowledge in the chest X-ray based diagnosis.
- Jun 14 – Jun 18 📌 **Research Student.** Department of Electronic Engineering, Fudan University, Shanghai, China.
Advisor: Prof. Yuanyuan Wang and Prof. Jinhua Yu
He worked on brain MR image analysis including tumor segmentation, image reconstruction and disease classification.
He also worked on compressing ultrasound signal.

Education

- 2018 – 📌 **Ph.D. Computing, Imperial College London, United Kingdom.**
- 2015 – 2018 📌 **M.Sc. Biomedical Engineering, Fudan University, China.**
Thesis title: *Deep learning based MR images analysis of glioma and its clinical applications.*
- 2011 – 2015 📌 **B.Sc. Electronic Engineering, Fudan University, China.**
Thesis title: *Fourier domain ultrasound beamforming.*

Research Publications

Refereed Journal Articles

- 1 Gu, J., Li, Z., Wang, Y., Yang, H., Qiao, Z., & Yu, J. (2019). Deep generative adversarial networks for thinsection infant mr image reconstruction. *IEEE Access*.

- 2 Li, Z., Yu, J., Wang, Y., Zhou, H., Yang, H., & Qiao, Z. (2019). Deepvolume: brain structure and spatial connection-aware network for brain mri super-resolution. *IEEE Transactions on Cybernetics*.
- 3 Wu, G., Lin, J., Chen, X., Li, Z., Wang, Y., Zhao, J., & Yu, J. (2019). Early identification of ischemic stroke in noncontrast computed tomography. *Biomedical Signal Processing and Control*.
- 4 Zhou, Z., Wang, Y., Yu, J., Guo, W., & Li, Z. (2019). Super-resolution reconstruction of plane-wave ultrasound image based on a multi-angle parallel u-net with maxout unit and novel loss function. *Journal of Medical Imaging and Health Informatics*.
- 5 Chen, Y., Li, Z., Wu, G., Yu, J., Wang, Y., Lv, X., ... Chen, Z. (2018). Primary central nervous system lymphoma and glioblastoma differentiation based on conventional magnetic resonance imaging by high-throughput sift features. *International Journal of Neuroscience*.
- 6 Wu, G., Li, Z., Wang, Y., Yu, J., Chen, Y., & Chen, Z. (2018). Primary central nervous system lymphoma and glioblastoma image differentiation based on sparse representation system. *Journal of Biomedical Engineering*.
- 7 Li, Z., Wang, Y., Yu, J., Guo, Y., & Cao, W. (2017). Deep learning based radiomics (dlr) and its usage in noninvasive idh1 prediction for low grade glioma. *Scientific Reports*.
- 8 Li, Z., Wang, Y., Yu, J., Guo, Y., & Zhang, Q. (2017). Age groups related glioblastoma study based on radiomics approach. *Computer Assisted Surgery*.
- 9 Li, Z., Wang, Y., Yu, J., Shi, Z., Guo, Y., Chen, L., & Mao, Y. (2017). Low-grade glioma segmentation based on cnn with fully connected crf. *Journal of Healthcare Engineering*.
- 10 Yu, J., Shi, Z., Lian, Y., Li, Z., Liu, T., Gao, Y., ... Mao, Y. (2017). Noninvasive idh1 mutation estimation based on a quantitative radiomics approach for grade ii glioma. *European Radiology*.

Refereed Conference Proceedings

- 1 Li, Z., Kamnitsas, K., & Glocker, B. (2019). Overfitting of neural nets under class imbalance: analysis and improvements for segmentation. In *International conference on medical image computing and computer-assisted intervention (miccai 2019)*.
- 2 Li, Z., Li, H., Han, H., Shi, G., Wang, J., & Zhou, S. K. (2019). Encoding ct anatomy knowledge for unpaired chest x-ray image decomposition. In *International conference on medical image computing and computer-assisted intervention (miccai 2019)*.
- 3 Li, X., Wang, Y., Yan, W., Van der Geest, R. J., Li, Z., & Tao, Q. (2018). A multi-scope convolutional neural network for automatic left ventricle segmentation from magnetic resonance images: deep-learning at multiple scopes. In *2018 11th international congress on image and signal processing, biomedical engineering and informatics (cisp-bmei 2018)*.
- 4 Yan, W., Wang, Y., Li, Z., van der Geest, R. J., & Tao, Q. (2018). Left ventricle segmentation via optical-flow-net from short-axis cine mri: preserving the temporal coherence of cardiac motion. In *International conference on medical image computing and computer-assisted intervention (miccai 2018)*.
- 5 Li, Z., Wang, Y., & Yu, J. (2017a). Brain tumor segmentation using an adversarial network. In *International miccai brainlesion workshop (miccai-brainlesion 2017)*.
- 6 Li, Z., Wang, Y., & Yu, J. (2017b). Reconstruction of thin-slice medical images using generative adversarial network. In *International workshop on machine learning in medical imaging (miccai-mlmi 2017)*.

Skills

Languages 📖 English, Mandarin Chinese.
Coding 📖 Python, Matlab, R, C/C++.
Machine Learning 📖 Pytorch, Tensorflow, MatConvNet.

Miscellaneous Experiences

Awards and Achievements

2019 📖 MICCAI 2019 Graduate Student Travel Award.
2018 📖 Winner of Huawei UK AI challenge.
 📖 CSC Imperial Scholarship.
 📖 Outstanding Graduate of Shanghai.
 📖 National Scholarship.
2017 📖 CSC-IBM Scholarship.
2016 📖 Intel Fellowship.

Journal Reviewer

📖 Neurocomputing; IEEE Access.

Volunteer

📖 MIDL 2019.

Teaching

Imperial 📖 Computer Vision; Graphics.
Fudan 📖 Circuit Laboratory; Signal Processing.

References

Ben Glocker

Reader
Imperial College London,
180 Queen's Gate, London SW7 2AZ, United Kingdom.
✉ b.glocker@imperial.ac.uk

Yuanyuan Wang

Professor
Fudan University,
220 Handan Road, Shanghai 200433, China.
✉ yywang@fudan.edu.cn