Ziqi Zhou

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Education

Nanjing University, Nanjing, China — Sep. 2020 – Present

Master student in Computer Science, Supervised by Prof. Yinghuan Shi

Nanjing Normal University, Nanjing, China — Sep. 2016 – Jun. 2020

Bachelor student in Computer Science, Supervised by Prof. Wanqi Yang

Publications

1. **Z. Zhou**, L. Qi, and Y. Shi. *Generalizable Medical Image Segmentation via Random Amplitude Mixup and Domain-Specific Image Restoration*, in European Conference on Computer Vision (**ECCV**), 2022.
2. **Z. Zhou**, L. Qi, X. Yang, D. Ni, and Y. Shi. *Generalizable Cross-modality Medical Image Segmentation via Style Augmentation and Dual Normalization*, in IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.
3. X. Han, L. Qi, Q. Yu, **Z. Zhou**, Y. Zheng, Y. Shi, and Y. Gao. *Deep Symmetric Adaptation Network for Cross-modality Medical Image Segmentation*, in IEEE Transactions on Medical Imaging (**TMI**), 2021.
4. **Z. Zhou***, X. Guo*, W. Yang, Y. Shi, L. Zhou, L. Wang, and M. Yang. *Cross-Modal Attention-Guided Convolutional Network for Multi-Modal Cardiac Segmentation*, in Machine Learning in Medical Imaging @ MICCAI (**MLMI**), 2019.

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- 3D Full Convolutional Neural Network Based CT Cardiac Image Automatic Segmentation System, 2019SR0146684
- An Attention Mechanism Guided Multi-Modal Cardiac Image Segmentation Method, 201910461477.2

Research Experience

Nanjing University — Nov. 2021 – Mar. 2022

Master Student, supervised by Prof. Yinghuan Shi — *Nanjing, China*

- **Research on Generalizable Multi-Center Medical Image Segmentation**
  - Combined the segmentation model with a self-supervised domain-specific image restoration.
  - Designed a random amplitude mixup (RAM) module, which incorporates low-level frequency information of different domain images to synthesize new images.
  - Proposed a more generalizable segmentation model for cross-center medical image generalization.

Nanjing University — Sep. 2020 – Nov. 2021

Master Student, supervised by Prof. Yinghuan Shi — *Nanjing, China*

- **Research on Generalizable Corss-Modal Medical Image segmentation**
  - Aimed at improving the generalization performance of the segmentation model on cross-modality medical images.
  - Designed a nonlinear style-augmentation module and a dual-normalization model for our task.
  - Proposed a more generalizable segmentation model for cross-modality medical image generalization.

Nanjing Normal University — Jun. 2018 – May. 2020

Research Intern, supervised by Prof. Wanqi Yang — *Nanjing, China*

- **Research on Deep Learning Based Multi-modal Whole Heart Segmentation (WHS) Algorithm**
  - Aimed at enhancing the substructure segmentation precision of 3D cardiac images of CT and MRI through convolutional neural network.

- Designed a cross-modal attention guided network for CT and MRI cardiac image segmentation.
- Conducted study and improvement of WHS Algorithm, code implementation.

Working Experience

SenseTime Jun. 2022 – Nov. 2022

Research Intern, supervised by Wei Li *Beijing, China*

- **Research on Generalizable Urban-Scene Segmentation with Long-Tailed Category Distribution**
  - Investigated domain generalization semantic segmentation of street scene in the case of long-tailed classification.
  - Proposed to use image-level and feature-level perturbations based on image and feature, enhancing the robustness and generalization of the model in the street scene.
  - Designed a distribution calibrated classification loss to balance training data distributions and improved the segmentation accuracy of tail classes.

Contest

- **4th Place**, The 8th CCF BDCI Remote Sensing Image Segmentation, 10,000 RMB Bonus 2020

Award

- **National Scholarship**, Ministry of Education of P.R. China 2022

Miscellaneous

- Services: Reviewer for CVPR 2023, TMI, JBHI
- GitHub: https://github.com/zzzqzhou