ZEFAN YANG

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EDUCATION

MPhil in Electronic Information (GPA: 90/100)   Sep. 2020 – present

Shenzhen University, China

Thesis: "Abdominal Multi-Organ Segmentation via Weakly-Supervised Learning"

Advisor: Prof. Yi Wang

B.Eng. in Biomedical Engineering (GPA: 86.2/100)   Sep. 2016 – Jul. 2020

Shenzhen University, China

PUBLICATIONS

Journals

1. **Zefan Yang**, Di Lin, Dong Ni, Yi Wang, "Non-Iterative Scribble-Supervised Learning with Pacing Pseudo-Masks for Medical Image Segmentation", submitted to *Medical Image Analysis (MedIA)*, October 2022.
2. **Zefan Yang**, Di Lin, Dong Ni, Yi Wang, "Recurrent Feature Propagation and Edge-Skip Connections for Automatic Abdominal Organ Segmentation", submitted to *Expert Systems with Applications*, August 2022.
3. Haoneng Lin, Zongshang Li, **Zefan Yang**, Yi Wang, "Variance-Aware Attention U-Net for Multi-Organ Semgentation", In *Medical Physics*, Volume 48, Issue 12, P. 7864-7876, December 2019.
4. Ping Zeng, Jiabin Huang, Songxiong Wu, Chengrui Qian, Fuyong Chen, Wuping Sun, Wei Tao, Yuliang Liao, Jianing Zhang, **Zefan Yang**, Shaonan Zhong, Zhiguo Zhang, Lizu Xiao, Bingsheng Huang, "Characterizing the structural pattern predicting medication response in herpes zoster patients using multivoxel pattern analysis", in *Frontiers in Neuroscience*, Volume 13, P. 534, May 2019.

Conferences

1. **Zefan Yang,** Yi Wang, "Graph-Based Regional Feature Enhancing for Abdominal Multi-Organ Segmentation in CT", in *IEEE International Symposium on Computer-Based Medical Systems*, Shenzhen, China, July 2022.

SKILLS AND INTERESTS

Research Interests

- Artificial intelligence in medical image analysis, weakly-supervised learning, semi-supervised learning, few-shot learning, zero-shot learning.

Programming Skills

- Python (Numpy, PyTorch, TensorFlow, Scikit-Learn, Matplotlib, OpenCV, SciPy, SimpleITK, Nibabel, etc.), LaTeX, GNU/Linux, Matlab, C++/C, R, Markdown, JavaScript, etc.

Standard Test

- IELTS Overall Band Score 7.5 (Listening 8.5, Reading: 8.5, Writing 6.5, Speaking 7.0).

RESEARCH EXPERIENCE

MPhil in SMILE Lab and MUSIC Lab   Jul. 2020 – present

Shenzhen University

Advisor: Prof. Yi Wang, Dong Ni

- To bypass the laborious process of annotating full masks, we proposed a simple yet effective non-iterative scribble-supervised segmentation approach by means of weight-sharing networks and consistency training.
- Tackled the problem that voxels in adjacent regions between organs tend to be misclassified and proposed an neural network-based appraoch incorporating boundary constraints and wide-range context information.

Internship in Radiology Department   Jul. 2019 – Aug. 2019

Guangzhou Panyu Central Hospital, China

Advisor: Yufeng Ye, MD

- Engaged in interdisciplinary research that focused on developing machine learning classifiers to differentiate hepatocellular carcinomas from benign cysts in CT, and assisted in the acquisition of CT or MRI scans.

Research Assistant in Medical AI Lab   Jan. 2017 – May. 2020

Shenzhen University

Advisor: Prof. Bingsheng Huang

- Participated in a neurosicence project to explore structural difference in sMRI between herpes zoster (a viral disease characterized by a painful skin rash) patients who have pain that is resistant or sensitive to medication, and was responsible for part of data collection and part of code development (related to multi-voxel pattern analysis and machine learning classifiers).

PRESENTATIONS

Oral Presentation on CBMS 2022   Jul. 2022

Shenzhen, China (Online Event)

- Presented and discussed a novel organ segmentation approach that incorporates edge skip-connections and recurrent neural networks (RNNs) propogating wide-range information through directed acyclic graphs.

SELECTED AWARDS

- Awarded First Prize for the best research poster in the graduate research workshop, 2021
- Awarded Master's Student Scholarship for being recognized as a quality student, 2020
- Awarded Star of Learning (First Prize) for achieving the highest GPA in the third academic year, 2019
- Awarded Shenzhen University Pengcheng Scholarship, 2019
- Awarded Third Prize in National BME Innovation Design Competition for College Student, 2019