

Shishuai Hu

Ph.D. Candidate, Shaanxi Provincial Key Laboratory of Speech and Image Information Processing
School of Computer Science and Engineering, Northwestern Polytechnical University
No.1, Dongxiang Road, Chang'an District, Xi'an, Shaanxi, 710129
sshu@mail.nwpu.edu.cn | +86-153-5350-5682

OVERVIEW

Shishuai Hu is currently a Ph.D. candidate in the Shaanxi Provincial Key Laboratory of Speech and Image Information Processing (SAIIP), School of Computer Science and Engineering, Northwestern Polytechnical University (NPU), supervised by Prof. Yong Xia. His research focuses on deep learning techniques for medical image segmentation, with particular interests in domain adaptation/generalization. Shishuai has achieved good results in several medical image analysis-related challenges, including first place in COVID-19 Lung CT Lesion Segmentation Challenge 2020.

EDUCATION

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| ■ Northwestern Polytechnical University
School of Computer Science and Engineering | Xi'an, Shaanxi, China
Sep. 2020 – Present |
| <ul style="list-style-type: none">• Ph.D. Candidate of Computer Science and Technology• Advisor: Prof. Yong Xia | |
| ■ Northwestern Polytechnical University
Honors College | Xi'an, Shaanxi, China
Sep. 2016 – Jun. 2020 |
| <ul style="list-style-type: none">• B.E. in Computer Science and Technology (GPA: 88.2 / 100, Ranking: 33 / 140)• Thesis: A Study on Kidney Tumor Segmentation on CT Images Using Deep Learning• Advisor: Prof. Yong Xia | |

AWARDS AND HONORS

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| ■ First Place in COVID-19 Lung CT Lesion Segmentation Challenge - 2020 | Jan. 2021 |
| ■ Second Prize in the Challenge of Segmentation of Pulmonary Tissues in the 4th ISICDM | Dec. 2020 |
| ■ Third Prize in the Challenge of Acceleration of MR Imaging in the 4th ISICDM | Dec. 2020 |
| ■ University Graduate Fellowship, Northwestern Polytechnical University | Sep. 2020 |
| ■ MICCAI Undergraduate Student Travel Award | Aug. 2019 |
| ■ Honors College Scholarship, Northwestern Polytechnical University | Sep. 2019, Sep. 2018, Sep. 2017 |

PROJECTS

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| ■ Domain Generalization for COVID-19 Lung CT Lesion Segmentation
Advisor: Prof. Yong Xia | Jan. 2021 – Present |
| <ul style="list-style-type: none">• Developing domain weighted normalization method to generalize COVID-19 Lung CT lesion segmentation to unseen domains. | |
| ■ COVID-19 Lung CT Lesion Segmentation
Advisor: Prof. Yong Xia | Nov. 2020 – Dec. 2020 |
| <ul style="list-style-type: none">• Developed a semi-supervised method to segment COVID-19 lung lesions on CT images.• Achieved first place in COVID-19 Lung CT Lesion Segmentation Challenge. | |
| ■ Pulmonary Tissues Segmentation on CT Images
Advisor: Prof. Yong Xia | Oct. 2020 – Nov. 2020 |
| <ul style="list-style-type: none">• Employed deep learning-based method to segment airways and vessels on chest CT images with limited labeled CT images.• Achieved second prize in the challenge of Segmentation of Pulmonary Tissues in the 4th ISICDM. | |

■ **Kidney Tumor, Liver Tumor and Pancreas Segmentation on CT Images** Sep. 2019 – Oct. 2020

Advisor: Prof. Yong Xia

- Developed a boundary-aware model for abdominal organ and tumor segmentation on CT images.
- Achieved a dice at 98.0% in kidney segmentation on the KiTS19 dataset, 96.80% in liver segmentation on the LiTS17 dataset, and 86.28% in pancreas segmentation on the NIH Pancreas dataset with 4-fold cross-validation.

PUBLICATIONS

- [1] S. Hu, J. Zhang, and Y. Xia. "**Boundary-Aware Network for Kidney Tumor Segmentation.**" Machine Learning in Medical Imaging (MLMI'20), 2020.

REFERENCES

- Yong Xia, Professor, Northwestern Polytechnical University; yxia@nwpu.edu.cn