Yibo Wang

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EDUCATION

Huazhong University of Science and Technology 2022.9 - present
Master Student in Biomedical Engineering. GPA: 3.74/4.0 Rank: 27/40
Huazhong University of Science and Technology 2018.9 - 2022.6
B.Eng. in Biomedical Engineering. (**Excellent Engineer Program**) GPA: 3.94/4.0 Rank: 4/106

RESEARCH INTEREST

Medical Image Analysis (Registration, Segmentation), Computer Vision (Video Processing)

PUBLICATION

Yibo Wang, MingWei Wen, Xuming Zhang. "Self-distilled Evolutionary Network for Deformable Image Registration via Pyramid and Cascaded Progressive Learning." *Submitted to* ***Information Fusion***, 2024. Paper
Yibo Wang, Zhichao Ye, Mingwei Wen, Huageng Liang, Xuming Zhang. "TransVFS: A Spatio-Temporal Local-Global Transformer for Vision-based Force Sensing during Ultrasound-guided Prostate Biopsy." ***Medical Image Analysis***, 2024. [Paper]– [Code]
Yibo Wang, Wen Qian, Mengqi Li, Xuming Zhang. "A Transformer-based Network for Deformable Medical Image Registration." ***CAAI International Conference on Artificial Intelligence (CICAI)***, 2022. Paper

RESEARCH EXPERIENCE

Research on Training Strategy-driven Deformable Medical Image Registration 2023.10 - 2024.3

- Proposed a self-distilled evolutionary network to improve registration based on the progressive learning.
- Developed a depth-wise pyramid evolution and distillation to progressively learn multi-scale deformations.
- Designed a broad-wise cascaded evolution and distillation to progressively achieve large deformation decomposition.
- Conducted extensive experiments on five public datasets to evaluate the superiority of the proposed method.
- Wrote a research paper "Self-distilled Evolutionary Network for Deformable Image Registration via Pyramid and Cascaded Progressive Learning", which had submitted to ***Information Fusion***.

Research on Vision-based Force Sensing during Ultrasound-guided Prostate Biopsy 2023.4 - 2024.4

- Designed a spatio-temporal local-global transformer model to achieve fast and accurate force sensing.
- Applied the multi-scale spatial attention and bi-direction temporal attention to facilitate the long-range dependence.
- Constructed four datasets from phantom and beagle dogs to evaluate the proposed method.
- Wrote a research paper "TransVFS: A Spatio-Temporal Local-Global Transformer for Vision-based Force Sensing during Ultrasound-guided Prostate Biopsy", which had been accepted by ***Medical Image Analysis***.

Research on GAN-based Multi-modality Deformable Medical Image Registration 2021.9 - 2022.6

- Proposed a fully convolutional UNet to achieve fast modality conversion.
- Designed a hybrid CNN-Transformer network as the generator in GAN to achieve accurate registration.
- Carried out plentiful experiments on three public datasets to demonstrate the effectiveness of the proposed method.
- Wrote a thesis paper which was honored as Outstanding Undergraduate Thesis.
- Wrote a research paper "A Transformer-based Network for Deformable Medical Image Registration", which was accepted by ***CAAI International Conference on Artificial Intelligence (CICAI2022)***.

SELECTED AWARDS

First Class Scholarship for Postgraduate Students (**Top 5%**) 2023.10
Third Prize, 19th China Post-Graduate Mathematical Contest in Modeling (**Top 25%**) 2023.4
First Class Scholarship for Postgraduate Students (**Top 5%**) 2022.10
Outstanding Undergraduate Thesis (**Top 2%**) 2022.6
Outstanding Undergraduate Award (**Top 5%**) 2022.6
Third Prize, 6th National Biomedical Engineering Innovation Design Competition for College Students (**Top 25%**) 2021.10
Academic Merit Scholarship (**Top 5%**) 2021.10
Second Prize, 7th China Undergraduate Life Sciences Contest (**Top 15%**) 2021.6
Honorable Mention, Mathematical Contest in Modeling (**Top 15%**) 2021.3
Second Prize, 12th China Undergraduate Mathematical Contest (**Top 15%**) 2020.12
Academic Merit Scholarship (**Top 5%**) 2019.10

SKILLS

Skills Python, C++, MATLAB, Pytorch, Latex
Language TOEFL 101 (R26+L27+S19+W29)