Weihao Dai

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EDUCATION

Northeastern University Shenyang, China
Master of Artificial Intelligence Sep. 2022 - Jun. 2025 (Expected)

- Weighted Average Score: 87.4/100
- Advisor: Prof. Chaolu Feng
- First-Class Scholarship for Outstanding Students (2022, 2023)

Bachelor of Computer Science and Technology Sep. 2018 - Jun. 2022

- Weighted Average Score: 85.9/100
- Second-Class Scholarship for Outstanding Students (2021)
- Third-Class Scholarship for Outstanding Students (2019, 2020)

PUBLICATIONS & MANUSCRIPTS

W. Dai, C. Feng, S. Chen, et al., "What Will Regularized Continuous Learning Performs if It Was Used to Medical Image Segmentation: A Preliminary Analysis," **2023 IEEE International Conference on Bioinformatics and Biomedicine (BIBM, CCF B)**, pp. 1860-1863, doi: 10.1109/BIBM58861.2023.10385386.

W. Dai, F. Kong, C. Feng, et al., "Left Ventricular Wall Thickness and Systolic Function Quantification for Hypertrophic Cardiomyopathy in Echocardiography," **submitted to IEEE Transactions on Medical Imaging (TMI, IF: 10.6)**.

RESEARCH EXPERIENCE

Automated Diagnosis and Prognosis of HCM Based on Echocardiography Oct. 2023 - Present
Graduate Researcher
Key Lab. of Intelligent Computing in Medical Image (MIIC), Ministry of Education *Shenyang, Liaoning*

- Collaborated with local hospitals to collect and process echocardiography data from hypertrophic cardiomyopathy (HCM) patients
- Proposed a novel ultrasound myocardial segmentation network, M2EchoSeg, which fully utilizes multi-scale, multi-view, and temporal information
- Developed a training-free, prior and anatomy-driven parameter estimation method to simultaneously quantify left ventricular systolic function and wall thickness from myocardial segmentation maps
- Integrating patient information and electrocardiograms to identify resting or latent obstructions in echocardiograms of HCM patients (ongoing)

Regularized Continuous Learning-Based Medical Image Segmentation Apr. 2023 - Sep. 2023
Graduate Researcher
College of Computer Science and Engineering, Northeastern University *Shenyang, Liaoning*

- Applied five regularization-based continual learning (RCL) methods to eight datasets across two medical image segmentation (MIS) scenarios, demonstrating their effectiveness in MIS
- Described the essence of the five RCL methods using a unified Taylor expansion

Feature Dimension Reduction and Classification of Leukemia Gene Expression Oct. 2021 - Apr. 2022
Undergraduate Thesis Advisor: Prof. Chaolu Feng
College of Computer Science and Engineering, Northeastern University *Shenyang, Liaoning*

- Developed a CNN combining SENet and ResNet for dimensionality reduction of leukemia gene expression
- The reduced features improved the performance of nine different classifiers by 3%-30%

Artificial Intelligence Practicum May 2021 - Aug. 2021
Undergraduate Researcher
College of Computer Science and Engineering, Northeastern University *Shenyang, Liaoning*

- Optimized English-to-Chinese translation performance of the Transformer model by simultaneously using absolute and relative position encoding
- Led a team that won the first prize in the practicum (only 2 teams received this award)

LEADERSHIP & SERVICE

Minister Sep. 2019 - Sep. 2020
Department of Growth and Development, Student Union, Northeastern University *Shenyang, Liaoning*

- Led the monthly evaluation of students' psychological states
- Provided counseling to high-risk students
- Organized regular psychological counseling activities

Member Sep. 2018 - Jun. 2021
Volunteer Association, Northeastern University *Shenyang, Liaoning*

- Completed over 40 hours of volunteer work each semester

SKILLS

Languages	Mandarin Chinese (native), English (CET-4, CET-6, preparing for IELTS)
Technical Skills	Python, C/C++, PyTorch, OpenCV, Scikit-Learn, Pandas, Stata, etc.
Soft Skills	Problem-solving, Analytical thinking, Team collaboration, Communication, etc.