

WEIJIE MA

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EDUCATION

The Chinese University of Hong Kong M.Phil. (Cand.), Computer Sci. & Tech. 2021 – present
Zhengzhou University B. Eng., Communication Engineering 2017 – 2021

RELEVANT SUBJECTS

Calculus: 4.0/4.0 Probability and Statistics: 4.0/4.0 Complex Function and Integral Transform: 4.0/4.0
Programming Basic: 4.0/4.0 Principle of Microcomputer: 3.7/4.0 Information Theory and Coding: 3.7/4.0

SELECTIVE PROJECTS AND RESEARCH EXPERIENCE

Colorectal Polyp Recognition via Cross-modal Representation Consistency 2022.02–2022.03

- Proposed a novel Transformer-base framework for colorectal polyp recognition with Cross-modal Global Alignment and Spatial Attention Module. With multi-level consistency between White-light (WL) and advanced Narrow Band Imaging (NBI) images, there is a more accurate diagnosis performance during WL-only model inference. Specifically, the proposed method achieve 2.4% higher performance with even approximately 1 million parameters decline. (This work was early accepted by MICCAI 2022)

The IJCAI-2019 Eldercare Robot Challenges (The 3rd Place) 2019.05–2019.08

- Utilized OpenPose to form a simple skeleton feature map and designing a VGG-based CNN for pose estimation, thereby triggering the response to the specific posture behavior through ROS; Use multi-angle and multi-scale data augmentation to collect dataset, and combine YOLOv4 to quickly obtain accurate recognition results under the limited number of on-site drugs in the competition to assist the elderly in taking medicine.

Automatic MRI diagnosis Pipeline of fetal lateral ventricle abnormalities 2020.06 – 2020.10

- Utilized a dual-CNN-based localization and segmentation to obtain the 3D mask, thus generating a fetal brain de-skull image, which addresses the problem of the blurring and variable shape and direction of the raw sampled brain image; Proposed an automatic diagnosis CNN pipeline of the task for insufficient and ambiguous fetal brain dataset based on transfer learning strategy, and the AUC value can be as high as $98.32 \pm 1.46\%$.

PUBLICATIONS

Weijie Ma, Ye Zhu, Ruimao Zhang*, Zhen Li. “Toward Clinically Assisted Colorectal Polyp Recognition via Structured Cross-modal Representation Consistency” Early Accepted (13%) *MICCAI 2022*

COMPETITIONS & CHALLENGES

Organizer MICCAI Multi-Modality Abdominal Multi-Organ Segmentation Challenge 2022 Singapore 2022
The 3rd Place The IJCAI-2019 Eldercare Robot Challenges (*Task Challenge*) Macao 2019
Excellent Design Work The IJCAI-2019 Eldercare Robot Challenges (*Design Challenge*) Macao 2019
Champion RoboCup Asia-Pacific (TianJin Invitational Tournament) 2019 @Home League Tianjin 2019
Champion RoboCup China 2019 @Home League Shaoxing 2019
The 2nd Place China Robotics Competition Service Robot Racetrack (*WhoIsWho Event*) Jinan 2019

PERSONAL ABILITY

- Familiar with Python & C++, Ever Java development experience, Good programming style
- Familiar with the common algorithms of deep learning, Good at PyTorch and Linux.
- Familiar with the development and distributed communication of ROS (Robot Operating Platform).

OTHERS

- Honors & Awards: Provincial-level Merit Student Award of Henan; School-level Merit Student Award, Excellent Student Cadre Award, and First-class Scholarship of ZZU
- Grade-level and Class-level Student Committee in ZZU; IELTS 6.5; CET-6 Pass
- Personal characteristics: Enthusiastic, Persistent, Good team spirit, Love of thinking and innovation.