Ye Zhu

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Education

Hong Kong Baptist University **Sep. 2023 – now**
Pre-candidacy PhD student in Computer Science *Hong kong, China*

South China Agricultural University **Sep. 2017 – June 2021**
Bachelor of Engineering in Software Engineering *Guangzhou, China*

Research Experiments

Symptom Disentanglement in Chest X-ray Images for Fine-Grained Progression Learning
Ye Zhu, Jingwen Xu, Fei Lyu, Pong C. Yuen*
June 2024, **MICCAI 2024 (accept)**

- Proposed two consecutive modules namely Symptom Disentangler (SD) and Symptom Progression Learner (SPL) to learn from static diagnosis to dynamic disease development.
- Experimental results on the public dataset Chest ImaGenome show superior performance compared to current state-of-the-art method.

Temporal Neighboring Multi-modal Transformer with Missingness-Aware Prompt for Hepatocellular Carcinoma Prediction
Jingwen Xu, **Ye Zhu**, Fei Lyu, Grace Lai-Hung Wong, Pong C. Yuen*
June 2024, **MICCAI 2024 (accept)**

- Proposed a Temporal Neighboring Multi-modal Transformer with Missingness-Aware Prompt (**TNformer-MP**) to integrate clinical time series and available CT scans for HCC prediction.
- Experiments conducted on a largescale multimodal datasets of 36,353 patients show that our method achieves superior performance with existing methods.

Inherent Consistent Learning for Accurate Semi-supervised Medical Image Segmentation
Ye Zhu, Jie Yang, Siqi Liu and Ruimao Zhang*
March 2023, **MIDL 2023 (accept, Oral)**

- Propose a novel Inherent Consistent Learning (ICL) method, which aims to learn robust semantic category representations through the semantic consistency guidance of labeled and unlabeled data to help segmentation.
- Conducted extensive evaluations on three medical image segmentation datasets (2D and 3D), outperforming the state-of-the-art methods with a large margin.

Toward Unpaired Multi-modal Medical Image Segmentation via Learning Structured Semantic Consistency
Jie Yang, **Ye Zhu**, Chaoqun Wang, Zhen Li and Ruimao Zhang*
March 2023, **MIDL 2023 (accept)**

- Proposed a novel method for performing unpaired multi-modal medical image segmentation based on a single Transformer by learning the structured semantic consistency between modalities.
- Collaborated in conducting extensive evaluations on two medical image segmentation scenarios, outperforming the state-of-the-art methods with a large margin.

AMOS: A Large-Scale Abdominal Multi-Organ Benchmark for Versatile Medical Image Segmentation
Yuanfeng Ji, Haotian Bai, Jie Yang, Chongjian Ge, **Ye Zhu**, Xiang Wan*, Ping Luo* and Ruimao Zhang*
April 2022, **NeurIPS 2022 (accept, Oral)**

- Built a new large-scale, diverse, and clinical abdominal organ segmentation dataset 0f 600 CT/MRI scans, namely AMOS, which is comprehensive with 15 organs, and is the largest dataset of its kind.
- Collaborated in benchmarking current baseline methods on this newly built dataset with various evaluation metrics, and designed extended experiments to validate that AMOS could serve as a versatile dataset for multiple learning tasks.

Toward Clinically Assisted Colorectal Polyp Recognition via Structure Cross-modal Representation Consistency
Weijie Ma, **Ye Zhu**, Jie Yang, Yiwen Hu, Zhen Li, Li Xiang and Ruimao Zhang*
February 2022, **MICCAI 2022 (early accept, top 13%)** .

- Proposed a novel Transformer-based framework is introduced to tackle WL-only CPC, which proposed the Cross-modal Global Alignment (CGA) and a newly designed Spatial Attention Module (SAM) to pursue the structured semantic consistency.
- Collaborated in conducting extensive evaluations on CPC-Paired Dataset with two paired image modalities (WL-NBI).

Hybrid-Order Anomaly Detection on Attributed Networks
Ling Huang, **Ye Zhu**, Yuefang Gao, Tuo Liu, Chao Chang, Caixing Liu, Yong Tang and Chang-Dong Wang*
July 2021, **TKDE 2021 (early accept)**

- Defined a new problem of hybrid-order anomaly detection on attributed networks, which aims to detect not only structure/attribute-abnormal nodes but also structure/attribute-abnormal motif instances.
- Developed a new deep learning model called Hybrid-Order Graph Attention Network (HO-GAT) and conducted extensive experiments on real-world datasets, confirming the effectiveness of the HO-GAT method.

Programming Skills

Programming Languages: Python, Java, C
Developer Tools: VS Code, Eclipse, Pycharm
Technologies/Frameworks: Linux, GitHub

Additional Information

Languages: Cantonese (Native), Mandarin (Native), English (Proficient - IELTS: 7.0)