

Yuan ZHONG

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Education

The Chinese University of Hong Kong (CUHK)

Hong Kong SAR

- Ph.D. in Computer Science and Engineering
- Supervisor: Prof. Qi Dou.
- Research Topics: Medical Image Analysis, Trustworthy AI

Aug. 2022 - Present

Wuhan University

Wuhan, China

- B.Eng in Remote Sensing Science and Technology
- GPA: **3.97**/4.00 (**93.8**/100). Rank: 1/298.
- First semester studying computer science at Hongyi Honor College: Rank 1/89.

Sep. 2018 - Jun. 2022

Research

1. Fairness in Medical Image Classification

Jul. 2022 - Present

- Manuscript: Wenlong Deng*, Yuan Zhong*, Qi Dou, Xiaoxiao Li. “Fair Medical Image Classification with Multiple Sensitive Attributes via Learning Orthogonal Representations”. *To be submitted to IPMI 2023*.
- Mitigate model bias with multiple sensitive attributes in medical image classification.
- Present a novel method for fair representation learning via feature whitening and space-level orthogonality.

2. Intracranial Hemorrhage (ICH) Segmentation

Jun. 2022 - Present

- Achieve accurate weakly-supervised ICH segmentation with limited positive patient data.
- Use diffusion models to generate a healthy template from brain CTs with hemorrhage, and detect anomaly by comparing the differences.

3. Federated Semi-Supervised Medical Image Segmentation

Jan. 2022 - May. 2022

- Study a decentralized scenario where heterogeneous clients are either labeled or unlabeled.
- Locally, we use a personalized teacher model to guide global model training on unlabeled data.
- Globally, we present dispersed aggregation to handle the gradient disparities among clients.

4. Video Frame Alignment Transformer

Jul. 2021 - Nov. 2021

- Present a transformer-based frame alignment module with deformable shifted windows for video enhancement.
- Outperform flow-based and DCN-based methods as they reliable flow or offsets estimation.

Awards & Honors

1. “LuoJia Model Student” of the Year, Wuhan University (**highest honor of undergraduates**) 2020
Final Candidate (18/30000+)
2. Yu Gang - Song Xiao Scholarship, Wuhan University (**Top 0.1%**) 2020
3. Excellent Student Scholarship, Wuhan University (**Rank: 1/303**) 2020
4. Excellent Student Scholarship, Wuhan University (**Rank: 1/298**) 2021
5. Second Prize - The 11th National Mathematics Contest 2019

Developments

1. Andriod End-to-end Image Compression and Recovering App Oct. 2020 - Nov. 2020
2. Web-based Logistics Management System Jun. 2020 - Dec. 2020
3. Tencent QQ Robot - Compus Assistant Apr. 2020 - Jun. 2020

Teaching

Teaching Assistant at CUHK

1. CSCI1130: Introduction to Computing Using Java Autumn 2022

Miscellaneous

1. Languages: Mandarin (Native), English (Fluent)
2. Skills: Pytorch, Python, C++, C#, JavaScript.