Xiaolong Huang

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Education

Chongqing University of Technology Chongqing, China
Bachelor of Engineering, Intelligent Science and Technology 2019-2023

- Third year GPA: 87.1/100, top 10%; Overall GPA: 84.2/100, top 30%

Publications

- One step Learning, One step Review
  Xiaolong Huang, Qiankun Li, Xueran Li, Gao Xuesong
  AAAI, 2024 (Accepted)
- Mitigating Context Bias in Action Recognition via Skeleton-Dominated Two-Stream Network
  Qiankun Li, **Xiaolong Huang**, YuWen Luo, Xiaoyu Hu, sun Xinyu, Zengfu Wang
  AMC-SME Workshop, **ACMMM** 2023 (Best Student Paper Award)
- Data-Efficient Masked Video Modeling for Self-supervised Action Recognition
  Qiankun Li, **Xiaolong Huang**, Zhifan Wan, Lanqing Hu, Shuzhe Wu, Jie Zhang, Shiguang Shan, Zengfu Wang
  ACMMM 2023
- Embracing Large Natural Data: Enhancing Medical Image Analysis via Cross-domain Fine-tuning
  Qiankun Li, **Xiaolong Huang**, Bo Fang, Huabao Chen, Siyuan Ding, Xu Liu
  JBHI 2023
- LABANet: Lead-Assisting Backbone Attention Network for Oral Multi-Pathology Segmentation
  Huabao Chen, **Xiaolong Huang**, Qiankun Li and Jianqing Wang, and Bo Fang, and Junxin Chen
  ICASSP 2023
- 2nd Place Solution to Google Universal Image Embedding
  Xiaolong Huang, Qiankun Li
  ILR Workshop, **ECCV** 2022 (Oral)

Honors and Awards

Kaggle [**Personal Profile**]

- Competition tier: **Competition Master**
- Competition Awards: 2 **gold** medals (2/2 solo); 4 **silver** medals (1/4 solo); 1 **bronze** medal. Team leader of all competitions
- Competition Ranks: Current rank: **176**/213103, top 0.08%; Highest rank: **77**/216576, top 0.036%
- Selected Competition Awards:
  - Google Universal Image Embedding Challenge (ILR Workshop, **ECCV** 2022)
    2/1022, **$10,000** bonus, **gold** medal (solo)
    This work is invited as oral presentation at ILR Workshop, **ECCV** 2022
  - Stable Diffusion - Image to Prompts Challenge
    8/1231, **gold** medal (solo)

Others Honors and Awards

- **2nd** place in OOD-CV Challenge 2023, Classification Track - Self-supervised pretrain. (OOD-CV workshop, **ICCV** 2023)
- **3rd** place in OOD-CV Challenge 2023, Classification Track - ImageNet-1k. (OOD-CV workshop, **ICCV** 2023)
- **3rd** place in ACCV 2022 Fine-grained Image Analysis Challenge. (OOD-CV workshop, **ACCV** 2023)
- Second Prize Scholarships, 2021-2022
- Third Prize Scholarships, 2020-2021

Research Experience

Collaborative Research March. 2022 - Present
collaborator: Qiankun Li (Ph.D.) *Advisor: Prof. Zengfu Wang*
University of Science and Technology of China Chinese Academy of Sciences

- Mainly focused on self-supervised learning and visual fine-tuning.
- (**AAAI** 2024): Revealed a delay defect of traditional weight decay. Proposed to perform knowledge reviewing by encouraging the current model weights to approach the pre-trained model weights during fine-tuning.
- (AMC-SME Workshop, **ACMMM** 2023, Best Student Paper Award): Built a two-stream deep neural network for video action recognition enhancements, which fuses the skeleton and RGB modalities to mitigate background bias.
- (**ACMMM** 2023): Proposed a data-efficient self-supervised video representation learning method based on masked video modeling, which significantly reduces pre-training costs while demonstrating prominent improvements in downstream tasks.

Domain Transformer for Visual Fine-Tuning (Bachelor's Thesis) Jan. 2023 - Jun. 2023
Advisor: Prof. Hanguang Xiao Chongqing University of Technology

- Proposed a novel domain transformer module for visual fine-tuning, which transfers the original distribution of the feature embeddings into the target distribution by tailoring a linear transformation for each feature embedding while keeping the backbone frozen.
- (**JBHI** 2023): Further applied domain transformer to medical image analysis. With two-stage training, domain transformer demonstrates more significant improvements.

Intelligent Dental Disease Recognition System Mar. 2022 - Mar. 2023
Advisor: Prof. Junxin Chen Shanghai, China

- Leader of the recognition group. Aided in diagnosing and analysing various dental diseases using AI technology. This was one of the first attempts to recognize multiple dental diseases at the instance level.
- Established a multi-class dental disease instance segmentation dataset, where each type of dental disease is annotated at the instance level with corresponding labels, bounding boxes, and masks.
- (**ICASSP** 2023): Designed an instance segmentation network to improve the performance of detecting and segmenting multiple dental diseases.

Patents

- A Deep Learning-based technique for Panoramic Oral Multi-Lesion Instance Segmentation
  Jianqing Wang, **Xiaolong Huang**, Qiankun Li, Yunfei Wu, Mengting He
  Under review