Erli Zhang

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EDUCATION

National University of Singapore — **Singapore**
PhD in School of Biomedical Engineering (Supervisor: Asst Prof Jin Yueming) — *August 2024 - Now*
Research focus: Surgical Video Generation, Surgical Foundation Models

Nanyang Technological University — **Singapore**
Bachelor of Engineering in Computer Science with Honours (Highest Distinction) — *August 2020 - June 2024*
Specialization: Artificial Intelligence and Data Science & Analytics
GPA: 4.7/5

PUBLICATIONS

Surgical SAM 2: Real-time Segment Anything in Surgical Video by Efficient Frame Pruning
In Proceedings of AIM-FM Workshop @ NeurIPS 2024
Code: `github.com/jinlab-imvr/Surgical-SAM-2`, *Preprint:* `arxiv.org/abs/2408.07931`

Q-Instruct: Improving Low-level Visual Abilities for Multi-modality Foundation Models
In Proceedings of Computer Vision and Pattern Recognition Conference (CVPR) 2024
Code: `github.com/Q-Future/Q-Instruct`, *Preprint:* `arxiv.org/abs/2311.06783`

Q-Bench: A Benchmark for General-Purpose Foundation Models on Low-level Vision
In Proceedings of International Conference on Learning Representation (ICLR) 2024
Code: `github.com/Q-Future/Q-Bench`, *Preprint:* `arxiv.org/abs/2309.14181`

Towards Explainable Video Quality Assessment: a Database and a Language-prompt Approach
In Proceedings of ACM International Conference of Multimedia (ACMMM) 2023
Code: `github.com/VQAssessment/MaxVQA`, *Preprint:* `arxiv.org/abs/2305.12726`

Exploring Video Quality Assessment of User Generated Contents from Aesthetic and Technical Perspectives
In Proceedings of IEEE International Conference on Computer and Vision (ICCV) 2023
Code: `github.com/VQAssessment/DOVER`, *Preprint:* `arxiv.org/abs/2211.04894v3`

RESEARCH EXPERIENCES

S-Lab for Advanced Intelligence, Nanyang Technological University — *January 2023 - June 2024*
Research Student — *Supervisor: Prof Lin Weisi*

- Conducted research on enhancing low-level vision capabilities in multi-modality foundation models
- Advanced video quality assessment methodologies, introducing explainable frameworks and databases tailored to user-generated content

Center for Cognition, Vision, and Learning, Johns Hopkins University — *July 2023 - December 2023*
Research Student — *Supervisor: Prof Alan L. Yuille*

- Analysed robustness dynamics in sequential learning models, measuring resilience across new tasks compared to jointly trained neural models.
- Adapted and evaluated robustness enhancement techniques within continual learning frameworks, assessing their effectiveness in maintaining model stability during sequential task acquisition.

Institute for Infocomm Research, Agency for Science, Technology and Research — *July 2022 – June 2023*
AI Research Engineer — *Supervisor: Dr Huang Weimin*

- Conducted research in medical image processing, with a focus on advancing mammogram analysis techniques.
- Designed a predictive model using weakly semi-supervised learning and transformers to assess breast cancer risk across multiple time points, integrating traditional mammograms with key risk factors and clinical data.