ZHI YU

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EDUCATION

University College London **Sep. 2024 - Sep. 2025**
M. Sc. in Advanced Biomedical Imaging *Overall Course Score: -*

Harbin Institute of Technology **Sep. 2020 - Jun. 2024**
B. E. in Bioengineering *Overall GPA: 3.6/4.0*

- **Core Module:** Calculus; Java; C; Biostatistics; Linear Algebra; Biochemistry; Molecular Biology; Cell Biology; Organic Chemistry; Genetic Engineering; Cell Engineering; Immunology; Unit Operation; Biomedical Imaging Techniques;

RESEARCH EXPERIENCE

Deep Learning-Based Cine MRI Segmentation for Cardiac Function Assessment **Jan. 2025 - Present**
Advisor: *Daniel Stuckey, Prof.*

- Manual segmentation of ED and ES area for assessing ventricular volumes from short-axis cardiac MR images.
- Implemented multiclass left ventricle segmentation using short-axis cardiac MRI registry with UNet3+.

Laparoscopic Surgical Instruments Binary Segmentation **Sep. 2023 - Jan. 2024**
Advisor: *Wenpeng Gao, Assoc. Prof.*

- Designed nove architecture based on U-Net with Transformer, tested on Endovis2017 dataset for surgical instruments binary segmentation, implemented ablation experiments to verify the efficiency of components.
- Segmented the sequenced images extracted from the video, approximately achieved surgical instrument tracking and outperformed existing schemes. - Code Available

Phase Detection of Surgical Instruments **Jun. - Jul. 2022**
Advisor: *Wenpeng Gao, Assoc. Prof.*

- Extracted images from Cholec80 videos and modified labels, generated random data to test feasibility, fine-tuned and trained AlexNet with acquired images.

INTERNSHIPS

PeRCeiVe Lab, University of Catania (Remote) **Jan. 2025 - Present**
Advisor: *Concetto Spampinato, Prof.*

- Fine-tuned existing networks and compared performances on Kvasir and NCI-ISBI 2013 Dataset for saliency prediction.
- Generated saliency maps with the best performing network as prompts for segmentation with SAM 2
- Work will be submitted to MICCAI

PUBLICATIONS

Surface Deformation Tracking in Monocular Laparoscopic Video - LINK **2023**

- Z. Liu, W. Gao, J. Zhu, **Z. Yu** and Y. Fu

TECHNICAL SKILLS

Programming language: Python, C++, C
Libraries & Frameworks: PyTorch, Qt, MySQL

STANDARDIZED TEST

IELTS: Overall 7.0 (Listening 7.0, Reading 8.0, Writing 6.0, Speaking 6.0) (2023)
GRE: Quantitive 163, Verbal 151, AW 3.5 (2023)