ZHI YU

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EDUCATION

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

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

- **Core Courses:** Calculus; Java; C; Biostatistics; Linear Algebra; Biochemistry; Molecular Biology; Cell Biology; Organic Chemistry; Genetic Engineering; Cell Engineering; Immunology; Unit Operation; Biomedical Imaging Techniques; Translational Biomedical Imaging; Translational Clinical Imaging; Precision Diagnosis for Precision Medicine;

RESEARCH EXPERIENCE

MSc Project: Cine MRI Segmentation for Cardiac Function Assessment

UCL *Apr. 2025 - Aug. 2025*

- Applied statistical and image analysis techniques to improve cardiac diagnostics using cine MRI.
- Designed and implemented a UNet3+ model in TensorFlow to automate segmentation and analyse functional metrics.
- Delivered results to supervisor through visual reports and presentations, improving clinical interpretability.

Graduate Project: Laparoscopic Surgical Instruments Binary Segmentation - Code

HIT *Sep. 2023 - Feb. 2024*

- Developed a novel Transformer-enhanced U-Net for surgical tool detection using PyTorch.
- Designed, tested, and presented comparative results across multiple AI architectures.
- Emphasised model interpretability and generalisability for real-world clinical adoption.

Lab Rotations: Surgical Phase Detection of Laparoscopic Videos

HIT *Mar. 2022 - Jul. 2022*

- Processed and annotated surgical video datasets, applying transfer learning using AlexNet.
- Achieved 80% accuracy on phase classification task with PyTorch.
- Presented findings in group discussions, highlighting ethical and clinical impacts.

INTERNSHIPS

AI Intern: PeRCeiVe Lab, University of Catania (Remote)

UNICT *Jan. 2025 - Feb. 2025*

- Evaluated and fine-tuned saliency prediction models for medical imagery using deep learning.
- Collaborated remotely with a European AI research team, enhancing cross-functional teamwork and communication.
- Integrated results with large vision-language models for novel segmentation use cases.

PUBLICATIONS

Surface Deformation Tracking in Monocular Laparoscopic Video **Medical Image Analysis, 2023**

- Co-author on deep learning–based method for surgical deformation tracking in real-time videos.

SKILLS

Programming language: Python, C++, C, MATLAB
AI/ML Libraries & Frameworks: PyTorch, TensorFlow
Soft Skills: presentation skills, interdisciplinary teamwork, agile collaboration

STANDARDIZED TEST

GRE: Quantitive 163, Verbal 151, AW 3.5 (2023)