Mengyi Zhou

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Education

Imperial College London 09/2023 - 09/2024
Master of Research (MRes) in Medical Robotics and Image-Guided Intervention

Beijing Normal University 09/2019 - 06/2023
Bachelor of Science (BSc) in Computer Science and Technology (GPA: 87.6/100)

Language

IELTS: 7.0 04/2023
(Listening: 7.5; Reading: 8.0; Writing: 6.0; Speaking: 6.0)

Academic Experiences

Microscopic Visual Servoing for Robot-assisted Endomicroscopy Tissue Scanning 02/2024 - Now
Supervisor: Dr. Stamatia Giannarou, Chi Xu

- Evaluate the distance between the pCLE imaging probe and tissue surface to guide the longitudinal translation of the imaging probe with respect to the tissue surface.
- Use spatial and frequency domain information of pCLE images as the inputs.
- Extend single-image-based distance regression to video-based distance regression using temporal processing methods.
- Integrate models into a robotic platform consisting of the 6 DOF parallel robot.

Development of a Multi-sensing Optical Probe for Tumour Margin Mapping 10/2023 - 12/2023
Supervisor: Dr. Alex Thompson, Dr. Stamatia Giannarou

- Developed a system for simultaneous measurement of confocal endomicroscopy images and Raman spectra to allow rapid and accurate classification.
- Implemented classifiers of pCLE images for two different tumours based on VGG19 with 99.3% accuracy.
- Implemented a migration learning approach using the pretrained network to classify other samples.
- Combined the trained model with PCA-based Raman spectral classifiers for multi-class classification with 96.7% accuracy.

Classification of Eclipsing Binary Light Curves Based on Deep Learning 12/2022 - 05/2023
Supervisor: Dr. Xianchuan Yu

- Implemented classification of astronomical light curves using deep learning methods.
- Estimated non-equally spaced time series periods and smoothed the data using a periodogram method.
- Designed and implemented the LSTM-based deep neural network auto-encoder.
- Implemented unsupervised feature extraction of eclipsing binaries light curves and achived classification task with an accuracy of about 90%.

Awards

Outstanding Undergraduate Graduation Thesis 2023
Mathematical Contest in Modeling (MCM) - Finalist (Top 2%) 2022
Scholarship for Competition Participation - First-Class 2022
Scholarship for Academic - Third-Class (twice) 2021 - 2022

Extracurricular Activities

"EnvrioMoment" Environmental Education Innovation and Communication 2021 - 2022
Beijing Normal University Cycling Association - Vice President 2021 - 2022
Beijing Normal University Volunteer Teacher Team - Publicity Vice Director 2021

Skills

Programming: Python, C/C++, MATLAB, Java
Deep Learning Frameworks: PyTorch, TensorFlow
Modeling Softwares: Unreal Engine 4, Unity, Blender