WangYuze

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EDUCATION

Imperial College London	10/2022-10/2023

Major: Medical Robotics and Image-Guided Intervention (Master of Research)
Course Modules: Medical and Surgical Imaging; Image Guided Intervention; Medical Robotics and Instrumentation; Minimally invasive Surgery; Sensing, Perception and Neuroergonomics
Research Topic: The Use of 3D Reconstruction and Virtual Reality to Support Prospective Bariatric Surgery Patients (Supervisor: Prof Fernando Bello)
Grade: High Merit

Tianjin Medical University	09/2017-06/2022

Major: Medical Imaging (Bachelor of Medicine)
Relevant Course: Imaging Applied Mathematics (90/100) Medical Physics (89/100) Fundamentals of Computer Imaging (92/100) Medical Imaging Generality (93/100) Computer Graphics (96/100) Medical Imaging Processing (87.5/100) MRI Imaging Technology (87.5/100) Imaging Examine Technology (90.0/100) Interventional Radiology (95.1/100) Functional Imaging of Medical Imaging (93.1/100)
Grade: 87.29,   **Ranking:** 3/61

ACADEMIC PROJECTS

Robotic guidance and localisation during endoluminal procedures	10/2022-12/2022

Project Team member for software engineering(Supervisor: Dr Stamatia Giannarou, Imperial College London)

➤ Develop a posenet and a mapnet model to train robots to locate and navigate automatically

➤ Develop a CycleGAN model to expand the number of images to verify robot performance

➤ This study enhanced endoscopic camera localisation by implementing an additional region-consistent loss term(error reduced to 2.4mm), introducing a sequential model to account for previous pose predictions, reducing the point-lumping problem, and generating synthetic CT depth images from endoscopic RGB images using CycleGAN. My role was to collect training sets and test algorithm efficacy.

➤ Achived Distinction mark in this group project.

Artificial intelligence, Robotics and the Internet of Things	07/2021-08/2021

Remote Research Projects Provided by IC(Supervisor: Dr Benny Lo, Imperial College London)

➤ Completed training courses, including Robotics and Artificial Intelligence, Pervasive Measurement and Internet of Things, Machine Vision and Artificial Intelligence, Artificial Neural Networks and Deep Learning, Data Visualization and Virtual Reality

➤ Designed a miniature medical robot with robot programming software gazebot and medical knowledge. My role was to collaborate on the design of virtual robots and automated pathfinding algorithms.

➤ Achieved Distinction (87%) in the course.

Image Processing Laboratory	09/2021-01/2022

Project Team member for labelling and pre-training(Supervisor: Dr Dongyue Li, Tianjin Medical University)

➤ Labeled out the lesion parts on lung images

➤ Completed the pre-training of neural networks to identify typical pathological changes by Pytorch.

➤ In this project, my dedicated role involves managing the crucial preprocessing steps, including data cleaning, image normalization, handling missing or corrupted data, data augmentation, image resizing or reshaping, and ensuring data compatibility with the PyTorch framework.

Brain Function Laboratory	09/2018-06/2021

Project Team member for pre-processing(Supervisor: Professor Meng Liang, Tianjin Medical University)

➤ Annotated the head MRI images and processed them with MATLAB software

➤ Performed slice timing and realigning

➤ Conducted normalizing, smoothing and filtering with SPM12

Electronic Medical Record for Medical Imaging	03/2019-06/2019

- ➢ Programmed electronic medical records for medical imaging, reflecting personal information, visit time, diagnosis results and other basic information for patients
- ➢ Achieved advanced operations such as image segmentation, image subtraction and key feature extraction

INTERNSHIPS

Affiliated Hospital of Nankai University	11/2021-06/2022

- ➢ Rotated among all departments to understand the diagnosis and treatment of different diseases
- ➢ Observed a large number of clinical treatments and surgery
- ➢ Provided primary diagnosis and treatment for patients

Tianjin Medical University Cancer Institute & Hospital	07/2021-11/2021

- ➢ Instructed patients to complete the specified imaging procedures and operated medical devices including CR, DR, CT, MRI, PET, etc.
- ➢ Assisted to complete imaging examinations and diagnostic reports; proposed initial diagnosis of lung cancer, oesophagal cancer and bone tumours based on medical imaging

Tianjin Hospital of ITCWM Nankai Hospital	09/2020-01/2021

- ➢ Observed clinical diagnosis and treatment
- ➢ Collected medical records to understand the conditions of patients and communicated with the patients and their families

ADDITIONAL COURSE

Coursera (Offered by Imperial College London)

Mathematics for Machine Learning: PCA

Mathematics for Machine Learning: Multivariate Calculus

Mathematics for Machine Learning: Linear Algebra

EXTRACURRICULAR ACTIVITIES

The 7th Model United Nations Development Cooperation Forum	07/2018-08/2018

Spoke as a representative on the state of international health and medicine

"New Era ·Tomorrow Doctor" Forum	05/2018

Responsible for conference management and coordination at the forum site

AWARDS

Outstanding Student Cadre Scholarship of Tianjin Medical University (Top 1%)

SKILLS

Language: English(IELTS: 7), Mandarin(native)
Programming: Matlab, Visual Basic, Python(Pytorch)
Software: MS Office, Blender, Unity

REFEREES

Prof Daniel Elson, Professor of Surgical Imaging, Department of Surgery & Cancer, Imperial College London, +44 20 7594 1700, daniel.elson@imperial.ac.uk

Prof Fernando Bello, Professor of Surgical Computing and Simulation Science, Centre for Engagement and Simulation Science, Imperial College London, +44 (0) 203 315 8231, F.Bello@imperial.ac.uk