

YINGJI FU

✉ yingji.fu@my.cityu.edu.hk

🌐 github.com/fuyingji102 📞 +86-15986617921
🌐 fuyingji.github.io 📍 Shenzhen, Guangdong, China

EDUCATION

- **The Hong Kong Polytechnic University (PolyU)** Kowloon, Hong Kong SAR, China
Doctor of Philosophy(PhD Student) Jan 2024 -
Research of Interests: Machine Learning in Medical Images, Medical Image Analysis, Neuroimaging, Imaging Genetics, Brain Development and Aging, Precision of Psychiatric Disorders.
- **City University of Hong Kong (CityU)** Kowloon, Hong Kong SAR, China
Msc in Biomedical Engineering Sep 2023 - Dec 2023
Major Courses: Biomedical Engineering Design, Regenerative Medicine, Biomedical Instrumentation, Manufacturing of Biomedical Devices, Flexible Bioelectronics for Medical Applications, Biomedical Imaging and Biophotonics, Biorobotics, Robotics in Minimally Invasive Healthcare, Dissertation.
- **Southern Medical University (SMU)** Guangzhou, Guangdong, China
Bachelor of Biomedical Engineering Sep 2018 - July 2022
Major Courses: Advanced Mathematics, Linear Algebra, Complex Function and Integral Transform, Probability Theory and Mathematical Statistics, Discrete Mathematics, Principles and Practice of Medical Statistics, Optimization Theory; C Language Programming, Data Structure, Object-Oriented Programming in C++, Algorithm Design and Analysis, Software Engineering, Programming.Net, Matlab Principles and Applications; Digital Signal Processing, Signal and System, Digital Image Processing; Computer Networks Principle and Application, Data communication technology and Application, Operating System Principles, Concept and Application of Database, Principle of Microcomputer and Interfacing.

ACADEMIC EVOLUTION

- My research interest lies at the intersection of medical imaging and artificial intelligence. With a background in researching medical pathological images and photoacoustic computed tomography during my undergraduate studies, I am enthusiastically engaged in expanding my knowledge in the field of neuroscience and learning about advanced imaging techniques used in brain science, leveraging artificial intelligence to further our understanding of MRI and its applications in neuroscience.

HONORS AND AWARDS

- Outstanding Graduate of SMU 2022
- Outstanding Undergraduate Dissertation of SMU 2022
- Outstanding Campers of SMU's Summer Camp 2021
- The 6th National College Students Art Exhibition and Performance - National First Prize 2021
- The 9th "Teddy Cup" Data Mining Challenge - Provincial Third Prize 2021
- Outstanding Student of SMU 2020-2021
- Third-Class Student Scholarship of SMU 2020-2021
- Outstanding Student of SMU 2019-2020
- Third-Class Student Scholarship of SMU 2019-2020
- Mathematical Contest in Modelling of SMU - University First Prize 2018

RESEARCH EXPERIENCE

- **Classification of Bowel Histopathology Images Using Deep Learning** Huang Lab, Nanfang Hospital (SMU)
Primary contributor June 2021 - July 2022
 - **Designed and optimized an advanced histopathology image classification system:**
 - Developed an advanced disease metric and extracted and scanned thousands of biopsy specimens.
 - Pre-processed the whole slide image (WSI) and conceived a classification system based on slide-level labels.
 - Combined semi-supervised learning and pseudo-labelling techniques to address imbalanced label volume in the dataset.
 - Associated Transformer and multiple instance learning (MIL) to associate adjacent features between different instances.
- **Multi-Spectral Interlaced Sparse Acquisition Photoacoustic Tomography** Qi Lab, SMU
Research Assistant April 2021 - July 2022
 - **Devised and improved an innovative technique for photoacoustic tomography:**
 - Integrated interleaved sparse projections at different wavelengths to obtain a set of dense projections.
 - Reconstructed dense projections for high-quality images and guided the reconstruction of interleaved sparse projections.
 - Extracted individual images for each absorber by spectrally separating the reconstructed images using prior guidance.

COMPETITION EXPERIENCE

• The 9th "Teddy Cup" Data Mining Challenge

Primary Author

May 2021

◦ Rock classification and oil content estimation using deep learning:

- Resolved category imbalance through confidence learning and precise rock area estimation using contour detection.
- Constructed a "Parallel Structure" model to extract and integrate global and local features from pre-processed images.
- Conducted sliding window predictions on multiple regions of images and aggregated the results through hard voting.

• Mathematical Contest in Modelling of SMU

Primary Author

Nov 2018

◦ Analysis of cost optimization strategies for floor installation considering various factors:

- Utilized mathematical expectation theory to accurately compute the minimum cost required for tile installation.
- Employed a highly efficient greedy algorithm to effectively model and optimize the mixed laying scheme.

EXTRACURRICULAR ACTIVITIES

• The 6th National College Students Art Exhibition and Performance

Chief of clarinet department

May 2021

- As the clarinet department supervisor in the college orchestra, I demonstrated strong leadership skills by managing competition affairs and coordinating daily operations. I actively participated in musical instrument competitions and received multiple awards, showcasing my commitment to excellence. These experiences highlight my leadership abilities and collaborative nature.

SKILLS SUMMARY

- **Languages:** IELTS (6.5), CET-6 (515).
- **Programming Languages:** Experienced in Python; Comfortable with C/C++/MATLAB, etc.
- **Experimental Techniques and Methodologies:** Skilled in algorithms and data structures; Well-versed in Machine Learning and Deep Learning methodologies; Capable of independently devising and conducting experiments.

TEACHING EXPERIENCE

Jun.2021-Nov.2021	Teaching Assistant	Introduction to Artificial Intelligence
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WORK EXPERIENCE

Jun.2021-Jun.2022	Research Assistant	Nanfeng Hospital, Southern Medical University (SMU)
Sep.2022-Nov.2022	Software Engineering Intern	Mindray, Shenzhen

REFERENCES

Dr. Qiu Anqi

Professor, Global STEM scholar
Department of Health Technology and Informatics
The Hong Kong Polytechnic University(PolyU)
Email: an-qi.qiu@polyu.edu.hk

Dr. Huang Bing

Professor
Department of Gastroenterology
Nanfeng Hospital, Southern Medical University (SMU)
Phone: (+86) 13826005110
Email: huangb1ng@smu.edu.cn

Dr. Zhang Hua

Associate Professor
Department of Biomedical Engineering
Southern Medical University (SMU)
Phone: (+86) 15625056736
Email: xinsier@smu.edu.cn