Yupei Zhang

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EDUCATION

University of Cambridge Cambridge, UK
PhD in Clinical Neurosciences – School of Clinical Medicine Oct 2024 – Now
PhD Supervisors: Prof. Chao Li and Prof. Stephen Price; Co-supervisor: Prof. Lequan Yu

City University of Hong Kong (CityU) GPA: 3.35 / 4.3 Hong Kong SAR
MSc Multimedia Info Technology (MSMIT1) – Department of Electrical Engineering Sep 2020 – Aug 2021
Related courses: Machine Learning, Digital Image Processing, Computer Graphics, Complex Network, etc.

Beijing Language and Culture University (BLCU) **GPA: 3.55 / 4.0 | 86.9 / 100** Beijing, China
Bachelor of Engineering in Digital Media Technology & Japanese Minor Sep 2015 – Jun 2019
Related courses: C language, C++, Data Structure, Virtual Reality, Video and Audio Processing, Signal Processing etc.

Honors/Awards:

- Interdisciplinary Contest in Modeling (2018): Honorable Mention (Administered by COMAP)
- **National Encouragement Scholarship (2018, 5%)**
- BLCU University-level Outstanding Student Leader (2018, 2%)
- BLCU Third Prize Scholarship (2017); BLCU Individual Scholarship (2016)

PUBLICATIONS

Journal Articles

1. **Yupei Zhang**[*], Yating Huang[*], Wanming Hu, Lequan Yu, Hujun Yin, Chao Li. (2026). Interpretable Multimodal Cancer Prototyping with Whole Slide Images and Incompletely Paired Genomics. IEEE Transactions on Medical Imaging (**TMI**).
2. **Yupei Zhang**[*], Xiaofei Wang[*], Anran Liu, Lequan Yu, Chao Li. (2026). Disentangled Multi-modal Learning of Histology and Transcriptomics for Cancer Characterization. IEEE Transactions on Medical Imaging (**TMI**).
3. Xiaofei Wang[*], Hanyu Liu[*], **Yupei Zhang**, Boyang Zhao, Hao Duan, Wanming Hu, Yonggao Mou, Stephen Price, Chao Li. (2025). Joint Modeling Histology and Molecular Markers for Cancer Classification. Medical Image Analysis (**MedIA**).
4. Li Pan[*], **Yupei Zhang**[*], Qiushi Yang, Tan Li, Zhen Chen. (2025). Long-tailed Medical Diagnosis with Relation-aware Representation Learning and Iterative Classifier Calibration. Computers in Biology and Medicine.
5. **Yupei Zhang**[*], Li Pan[*], Qiushi Yang, Tan Li, Zhen Chen. (2024). Unified Multi-modal Diagnostic Framework with Reconstruction Pre-training and Heterogeneity-combat Tuning. IEEE Journal of Biomedical and Health Informatics (**JBHI**).
6. Zhengdao Li, **Yupei Zhang**, Hanwen Xing, Kwok-Leung Chan. (2023). Facial Micro-Expression Recognition Using Double-Stream 3D Convolutional Neural Network with Domain Adaptation. Sensors.
7. **Yupei Zhang**, Kwok-Leung Chan. (2021). Saliency Detection with Moving Camera via Background Model Completion. Sensors.

Conference Papers

1. Li Pan[*], **Yupei Zhang**[*], Qiushi Yang, Tan Li, Xiaohan Xing, Maximus C. F. Yeung, Zhen Chen. (2024). Focus on Focus: Focus-oriented Representation Learning and Multi-view Cross-modal Alignment for Glioma Grading. IEEE International Conference on Bioinformatics and Biomedicine (BIBM).
2. **Yupei Zhang**[*], Xiaofei Wang[*], Fangliangzi Meng, Jin Tang, Chao Li. (2024). Knowledge-driven Subspace Fusion and Gradient Coordination for Multi-modal Learning. Medical Image Computing and Computer Assisted Intervention (**MICCAI**).
3. Li Pan[*], **Yupei Zhang**[*], Qiushi Yang, Tan Li, Zhen Chen. (2023). Combat Long-tails in Medical Classification with Relation-aware Consistency and Virtual Features Compensation. Medical Image Computing and Computer Assisted Intervention (**MICCAI**).
4. **Yupei Zhang**. (2022). Research on Phoneme Recognition using Attention-based Methods. International Conference on Computing and Pattern Recognition (ICCPR). Best Presentation Award.

Preprints

1. **Yupei Zhang**, Hao Chen, Li Pan, Chao Li, Xiaohan Xing. (2026). Correlation-Guided Flow Matching with Annealed Masking for Spatial Transcriptomics Generation. arXiv preprint, arXiv:2609.22187.
2. Xiaofei Wang, Yinyan Wang, Wanming Hu, **Yupei Zhang**, Xinke Zhang, Chen Lu, Jie Hu, Zeya Yan, Xing Liu, Hao Duan, Yonggao Mou, Tao Jiang, Mayen Briggs, Stephen Price, Chao Li. (2025). Towards real-world molecular pathology diagnosis of cancer with cross-modal AI. medRxiv preprint, doi:10.1101/2025.07.07.25330997.

[*] Equal contribution.

PATENT

1. AN INTERACTIVE ELDERLY ASSISTANCE SYSTEM, HK30085199, as one of the inventors. July 2022

RESEARCH EXPERIENCE

Multi-modal Pan-Cancer Classification, Cambridge University Hong Kong, Hong Kong
Collaboration as a co-first author Sep 2023 – Sep 2024

- Conducted research on the 5th WHO histology-molecular diagnosis and dataset for Pan-Cancer.
- Responsible for the design and development of the multi-modal pan-cancer classification algorithm.

Medical Image Analysis on Multi-modal Pre-training & Long-tailed Challenges Hong Kong, Hong Kong
Collaboration as a co-first author Nov 2022 – Sep 2024

- Proposed a unified multi-modal diagnosis framework for the medical multi-modal pre-training and the heterogeneity downstream tuning (**Published at IEEE JBHI**).
- Proposed a relation-aware consistency and virtual features compensation framework to tackle the Long-tail challenges in the medical image classification task (**Published at MICCAI 2023**).

Saliency detection with moving camera via background model completion, CityU Hong Kong, Hong Kong
Dissertation project of MSc, which got an A- grade. Feb 2021 – Aug 2021

- Background modeling, Background subtraction, Feedback mechanism and evaluation.

Analysis of Automatic Landmarks Based on Signal Processing Methods, BLCU Beijing, Beijing
*Final year thesis of Bachelor, which won **the university's excellent thesis**.* Mar 2019 – May 2019

- Detected the landmarks of TIMIT corpus under Matlab environment based on prof. Sharlene A. Liu's signal processing method in *Landmark detection for distinctive feature-based speech recognition*.
- Conducted a comparison between signal processing and manually labelling phonemes in TIMIT corpus with Python to validate the feasibility of the signal processing method.

Speech Acquisition and Intelligent Technology Lab (SAIT Lab), BLCU Beijing, Beijing
Corpus research for helping learners effectively master Chinese phonetic skills; App project to help teachers effectively master international students' Chinese skills. Jul 2018 – Aug 2019

- Self-taught and completed labeling of a corpus of second language learners with Praat efficiently.
- Self-taught HTML, CSS & Javascript within a week to optimize user interface of a Chinese learning app.
- Co-wrote and presented the article *Mispronunciation Detection Based on Extended Recognition Network of Initials and Finals Constraint* at the 13th Phonetic Conference of China (PCC 2018).

PROFESSIONAL EXPERIENCE

The University of Hong Kong Hong Kong, Hong Kong
*Research Assistant (**Full-time**), **Department of Pathology, School of Clinical Medicine*** Dec 2023 – Oct 2024

- Design and develop multimodality deep learning models for diagnosis and prognosis of chondroid tumors.
- Multi-modal data processing, including clinical data, different medical images (X-ray, CT, MRI), and whole slide images of histology slides from different collaborative hospitals.

Centre for Intelligent Multidimensional Data Analysis Limited, InnoHK, CityU & Oxford Hong Kong, Hong Kong
*IT Officer (**Full-time**), R&D Group* Feb 2023 – Nov 2023

- Spearheaded the design and development of two full-stack web projects utilizing Django, VUE.js, and Express.js.
- Directed a Cantonese voice changer initiative, from data collection to model training using RVC.
- Group leader of two music analysis projects, which included a karaoke feature and a music classification feature using Python.

*Research Assistant (**Full-time**), R&D Group* Oct 2021 – Jan 2023

- Orchestrated a speech analysis project that encompassed speech-to-text and text-to-speech functionalities using the C++ SAPI library.
- Independently carried out the development of a pose estimation project using Flutter.
- Collaborated with a team of six to complete a motion capture project utilizing Xsens.

Zhengzhou Enyu Electronic Technology Co., LTD Zhengzhou, Henan
*Implementation Engineer (**Full-time**), research and development Division* Jul 2019 – Nov 2019

- Maintained the Edelweiss database and the PropertyCloud database daily; completed the exporting of orders' details, wage income sheet, and company income statement for 4 subsidiaries monthly using SQL.
- Completed 3 prototype projects using Mockplus, which have been integrated into 3 companies respectively.
- Self-taught and developed a mini program using the WeChat Developer Tool to show news on WeChat.

JD.Com, Inc. Beijing, Beijing
*Technology Research & Development Product Manager (**Intern**), Y Division* Jan 2018 – Mar 2018

- Designed training manuals for 3 enterprise supply chain products after online user surveys.

- Collected public information on other influential supply chain companies using Gartner rankings; Conducted an analysis and delivered 18 analytical reports, which were utilized by my team leader.

LEADERSHIP EXPERIENCE

Junior Achievement China Beijing, Beijing

***Volunteer Leader**, Black Sesame Alley Primary School Class* Mar 2017 – Jul 2017

- Led a team of 5 volunteers to organize and carry out voluntary teaching activities at a local primary school for 11 visits, winning praise from teachers, students and the '**Excellent Volunteer**' prize.

"Mud Dog" Microfilm Zhoukou, Henan

***Director** & Cinematographer.* Mar 2017 – Apr 2017

- Organized 5-member team to travel to my hometown, Henan province, to make a microfilm about the mud dog, one of the national intangible cultural heritages of Henan Province, calling for people to protect and pass on intangible cultural heritages.
- This film was nominated for best cinematography in the BLCU microfilm contest.

BLCU Public Service Station Beijing, Beijing

***Group Leader**, Public Service Department* Sep 2016 – Jul 2017

- Planned and hosted the first BLCU entrepreneurship competition; organized promotion online in conjunction with promotions on campus, attracting over 100 students to the competition.
- Edited WeChat articles written by junior students, chaired weekly brainstorming sessions, planned & delegated tasks & volunteering activities for the following weeks.

OTHERS

Skills: C++, Pytorch, Pytorch-Lightning, Unity, SQL

Activities: BLCU Chinese and Foreign Student Art Troupe (member of News center & BLCU Choir), Chinese Undergraduate Computer Design Contest ('Excellent Volunteer')