

## Education

**09.2019–07.2022** Master of Science in Computational Mathematics, *Nankai University (NKU)*, China

**Thesis** *GANs based Personal Style Imitation of Chinese Handwritten Characters.*

**Advisors** Prof. Yunhua Xue, Prof. Chunlin Wu

**Related Courses** Approximation Theory and Methods, Numerical Optimization, Convex Analysis, Variational Analysis, Real Analysis, Functional Analysis, Matrix Computation, Foundations of Measure Theory and Probability, Numerical Solutions of Partial Differential Equations, and more.

**Cumulative GPA** 3.06/4.00

**09.2014–07.2018** Bachelor of Engineering in Information Security, *Lanzhou University (LZU)*, China

**Thesis** *Improved Upper Bounds of Roman Domination Number in Maximal Outerplanar Graphs.*

**Advisor** Prof. Zepeng Li

**Related Courses** Discrete Mathematics, Operating Systems, Data Structures, C and C++ Programming Lab, Java Programming Lab, Database Theory and Lab, Computer Organization and Design, and more.

**Cumulative GPA** 4.15/5.00

## Research Experience

**11.2022–07.2024** Research Assistant, *Computational Medical Imaging Laboratory*

School of Computer Science and Engineering, Sun Yat-sen University, China

**Program** National Key Research and Development Program of China, focused on Breast Cancer, aims to develop models with clinical interpretability and generalization.

**Advisors** Prof. Yao Lu, Dr. Ting Song

**Project Focus** Placenta Accreta Spectrum Disorders, T2-WI MRI, Prenatal Diagnosis, Multi-class classification.

**Experience and Skills** Literature research, data preprocessing, model building (programming), research paper writing.

**Publication** Submitted to ISBI 2025 and accepted: “Anatomy-guided Multitask Learning for MRI-based Classification of Placenta Accreta Spectrum and its Subtypes.”

**12.2023–01.2024** Research Assistant, *Computational Medical Imaging Laboratory*

School of Computer Science and Engineering, Sun Yat-sen University, China

**Program** National Natural Science Foundation of China, focused on Breast Cancer, aimed to develop a prediction model for the Chinese female population mainly with FFDM and US.

**Advisors** Prof. Yao Lu, Dr. Xiang Zhang

**Project Focus** Breast Cancer, Dual-Energy CT, Sentinel Lymph Nodes, Metastatic status, Multi-class classification.

**Experience and Skills** The first comprehensive research experience involved conducting literature reviews, designing experiments, writing research papers, and working with the TensorFlow and Keras frameworks.

**Publication** Submitted to MICCAI 2024 and revised for submission to the Journal of *Medical Physics*: “DECT-Based Space-Squeeze Method for Multi-Class Classification of Metastatic Lymph Nodes in Breast Cancer.”

**01.2022–06.2022** Research Student, *Image Analysis Team*

School of Mathematical Sciences, Nankai University, China

**Task** ADMM model from the manuscript “Deep ADMM-Net for Compressed-Sensing MRI.”

**Supervisors** Prof. Chunlin Wu, Prof. Yunhua Xue

**Focus** Compressed-sensing Theory, Iterative Equations, Neural Networks, MRI reconstruction.

**Experience and Skills** The second programming experience involved proving mathematical equations and applying Deep Learning techniques. I reproduced the iterative mathematical equations using C++, Python, and PyTorch.

**01.2021–04.2021** Research Student, *Image Analysis Team*

School of Mathematical Sciences, Nankai University, China

**Task** ROF-model from the manuscript “*Nonlinear Total Variation Based Noise Removal Algorithms.*”  
**Supervisor** Prof. Yunhua Xue

**Focus** Image Restoration, Denoise, PDE, Total-Variation Penalty.

**Experience and Skills** My initial project experience included proving mathematical equations and using both C++ and Python to develop the ROF model.

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## Other Work Experience

### Funding

**Proposal Writing** Accepted; National Key Research and Development Program of China [No. 2023YFE0204300].

**Report Writing** Succeeded; Finished three Completion Reports and three Progress Reports; National Natural Science Foundation of China [No. 81971691, 12126610]; R&D Program of Pazhou Lab (Huangpu) [No. 2023K0606].

### Specification

**Patent** 1 Patent Application Specification; under review.

**Device** 1 Medical Device Application Specification; succeeded.

### Teaching Experience

**Courses** Calculus; Mathematical Analysis

**Thesis** *Breast Cancer Classification Method Based on Dual-Energy CT Images*

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## Language Proficiency

**Mandarin** Native

**English** Professional Level: IELTS 6.5; CET6 476/710; CET4 544/710

**Cantonese** Intermediate

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## Skills

**Technical** Python, PyTorch, Tensorflow + Keras, L<sup>A</sup>T<sub>E</sub>X, Git, C/C++, MATLAB

**GitHub repository** <https://github.com/pigejianghai/projects>

**Other** Linux (Ubuntu), Microsoft Office, Adobe Photoshop

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## Interest

Artificial Intelligence, Mathematics, Medical Image Computing, Physics

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## Awards

**2014 – 2018** Four-time recipient of the Third-Class Merit Scholarship for Academic Excellence at LZU.

**2019 – 2022** Three-time recipient of the Third-Class Merit Scholarship for Academic Excellence at NKU.

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## References

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### Prof. Chunlin Wu

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### Prof. Yao Lu

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## Publications

- [1] **Hai Jiang** et. al. “Anatomy-Guided Multitask Learning for MRI-Based Classification of Placenta Accreta Spectrum and Its Subtypes.” *IEEE International Symposium on Biomedical Imaging (ISBI)*, 2025.
- [2] Jiawei Pan, Zilong He, Yue Li, Weixiong Zeng, Yaya Guo, Lixuan Jia and **Hai Jiang** et. al. “Atypical architectural distortion detection in digital breast tomosynthesis: a multi-view computer-aided detection model with ipsilateral learning.” *Physics in Medicine & Biology* 68, no. 23 (2023): 235006.