

# Hai Jiang

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<https://github.com/pigejianghai>

## Education

- 09.2019–07.2022** **Master of Science**, *Computational Mathematics*, School of Mathematical Sciences  
Nankai University (NKU), Project **985 & 211**, Tianjin, China
- Thesis** *GANs based Personal Style Imitation of Chinese Handwritten Characters.*
- Developed an end-to-end CycleGAN framework to replicate calligraphic styles, achieving 85% visual similarity (10% improvement over baselines).
  - Skills: GANs, data preprocessing, style-transfer learning, Python, PyTorch.
- Advisors** Prof. Yunhua Xue, Prof. Chunlin Wu
- Related Courses** Approximation Theory, Numerical Optimization, Convex Analysis, Functional Analysis, Matrix Computation, Numerical PDEs.
- Cumulative GPA** 3.06/4.00
- 09.2014–07.2018** **Bachelor of Engineering**, *Information Security*, School of Information Science and Engineering  
Lanzhou University (LZU), Project **985 & 211**, Gansu, China
- Thesis** *Improved Upper Bounds of Roman Domination Number in Maximal Outerplanar Graphs.*
- Focused on graph theory and combinatorial optimization.
- Advisor** Prof. Zepeng Li
- Related Courses** Discrete Mathematics, Data Structures, Operating Systems, C/C++ Programming, Database Theory.
- 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
- Project** Placenta Accreta Spectrum Disorder Classification
- Developed a multi-task learning model using T2-WI MRI images, achieving **AUC of 0.80**.
  - Published: “Anatomy-Guided Multitask Learning for MRI-Based Classification of Placenta Accreta Spectrum and Its Subtypes” (Accepted at ISBI 2025).
- Skills** Literature review, data preprocessing, model building (PyTorch), research writing.
- 12.2023–01.2024** **Research Assistant**, *Computational Medical Imaging Laboratory*  
School of Computer Science and Engineering, Sun Yat-sen University, China
- Project** Breast Cancer Metastasis Prediction
- Designed a CNN-based system using dual-energy CT scans to predict metastasis in Sentinel Lymph Nodes, achieving **AUC of 0.85** (cross-validation).
  - Manuscript submitted to MICCAI 2024 and under revision for Journal of Medical Physics.
- Skills** Experimental design, TensorFlow, Keras, data analysis, research writing.
- 01.2022–06.2022** **Research Student**, *Image Analysis Team*  
School of Mathematical Sciences, Nankai University, China
- Project** ADMM Model for Compressed-Sensing MRI
- Reproduced iterative mathematical equations from “Deep ADMM-Net for Compressed-Sensing MRI” using C++, Python, and PyTorch.
- Skills** Compressed-sensing theory, neural networks, MRI reconstruction.
- 01.2021–04.2021** **Research Student**, *Image Analysis Team*  
School of Mathematical Sciences, Nankai University, China
- Project** ROF Model for Image Denoising
- Implemented the ROF model from “Nonlinear Total Variation Based Noise Removal Algorithms” using C++ and Python.

**Skills** Image restoration, PDEs, total-variation penalty.

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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.

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## Technical Skills

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

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

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

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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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## Language Proficiency

**Mandarin** Native

**English** Professional (IELTS 6.5, CET6 476/710, CET4 544/710)

**Cantonese** Intermediate

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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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## Interest

Artificial Intelligence, Mathematics, Medical Image Analysis, Physics

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## References

### Prof. Yunhua Xue

Associate Professor in Computational Mathematics at Nankai University

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### Prof. Yao Lu

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### Dr. Yuanpin Zhou

Postdoctoral researcher in Medical Image Analysis at Zhejiang University

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