# Chenru Wang

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## Education

**Ocean University of China** *Shandong, China*

*Bachelor of Mathematics and Applied Mathematics* *Sept.2021 – Jun.2025*

- Overall GPA: 3.2/4(82.9/100)
- Rank: 9/49

**Core Courses:**
Real Analysis(92), Optimization(96), Time Series Analysis(95), Ordinary Differential Equations(88), Partial Differential Equation(87), Bioinformatics(91), Python(98), MATLAB Programming(98)

## Research Interests

Generative models, Diffusion Theory, Reinforcement Learning, Computational Neuroscience, Optimization algorithms.

## Publications

- **Wang, C.**, Zhu, B., Zhang, C. (2025). PMI: Flow-Based Inversion Correction via Proximal Operator. (Submitted)
- **Wang, C.**, Chen, Z., Li, M., Yin, H., Zhou, S., Zhang, J., Zeng, X., Zhang, Q. (2025). DDUM: Deformable Dilated U-structure Module for Coronary Stenosis Detection. Medical Engineering & Physics.

## Research Experience

**Research on inversion and editing techniques in generative models** *Jun.2025 – Present*

*Research Assistant, AGI Lab, Westlake University* *Advisor: Chi Zhang*

- Developed a plug-and-play velocity correction framework to improve inversion stability and editing fidelity in flow-based generative models.
- Achieved state-of-the-art results on PIE-Bench; first-author paper is under review.

**Research on detection of stenosis of coronary arteries** *Jun.2023 – Apr.2024*

*Undergraduate Student, Ocean University of China* *Advisor: Xueying Zeng*

*Provincial Training Program of Innovation and Entrepreneurship for Undergraduates* *Leader*

- Applied deep learning techniques to assist physicians in diagnosing coronary artery disease and to reduce diagnostic errors caused by subjective judgment.
- Proposed the Deformable Dilatable U-structure Module to specialize generic networks for coronary stenosis detection and improve their generalization ability.
- Constructed a more complex and representative dataset, the 302 dataset, to evaluate and enhance the model's generalization performance in real-world clinical scenarios.

**Research on noise reduction and enhancement methods of cardiac coronary angiography images** *Nov.2022 – Sept.2023*

*Undergraduate Student, Ocean University of China* *Advisor: Xueying Zeng*

- Explored various methods for denoising and enhancing coronary angiography images, and proposed a novel hybrid approach to improve image quality.
- Developed a new super-resolution reconstruction method by integrating deep learning-based techniques with traditional image processing approaches.

## Skills

**Programming Language**: Python(Pytorch, Opencv, Scikit-learn,etc), C/C++, Matlab, R

**Professional Software**: LaTex, Lingo, Mathtype, Mathematica, SPSS

**Language**: English(IELTS - 6.5)

## Awards

The Third Prize Scholarship, Ocean University of China(2023 & 2024)

Honorable Mention, Mathematical Contest in Modeling(2023 & 2024)

Outstanding Student, Ocean University of China(2024)

Outstanding Graduates, Ocean University of China(2025)