

Zhongxiao (Clara) Cong

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EDUCATION

Carnegie Mellon University

08/2024 – 12/2025 | Pittsburgh, PA

M.S. Candidate in Computer Vision

- Courses: Machine Learning, Mathematical Fundamentals for Robotics, Advanced Computer Vision

ShanghaiTech University

09/2020 – 06/2024 | Shanghai, China

B.Eng. Computer Science and Technology

- GPA 3.83/4.0; Rank: 6/247

- Core courses: Algorithms and Data Structures (A), Introduction to Machine Learning (A), Artificial Intelligence (A+), Advances in Computer Vision (A), Probability and Statistics (A+), Mathematical Analysis (A+), Numerical Optimization (A+)

Massachusetts Institute of Technology

02/2023 – 05/2023 | Cambridge, MA

Exchange Student, Computer Science

- GPA 5.0/5.0

- Courses: Advances in Computer Vision, Matrix Methods

PUBLICATIONS

Dynamic Neural Fields for Learning Atlases of 4D Fetal MRI Time-series

Zeen Chi*, Zhongxiao Cong*, Clinton J. Wang, Yingcheng Liu, Esra Abaci Turk, P. Ellen Grant, S. Mazdak Abulnaga, Polina Golland, Neel Dey (* Equal contribution)

Medical Imaging Meets NeurIPS (NeurIPS Workshop) 2023

EXPERIENCE

PLUS Lab, ShanghaiTech University

09/2023 – 05/2024 | Shanghai, China

Research Assistant

• Domain Robust Open-Vocabulary Semantic Segmentation

- Proposed a text-guided training approach to enhance the domain generalization of open-vocabulary segmentation models
- Proposed to train the model with paired text prompts to eliminate domain information, allowing it to directly remove domain information from image features during testing by leveraging the alignment between text and image feature spaces in the CLIP model
- Achieved approximately 3% improvement in Mean Intersection over Union (mIoU) on domain generalization datasets, surpassing the open-vocabulary segmentation baseline

Medical Vision Group, MIT CSAIL

03/2023 – 08/2023 | Cambridge, MA

Research Assistant

• Dynamic Neural Fields for Learning Atlases of 4D Fetal MRI Time-series

- Utilized dynamic neural fields to stabilize 4D MRI time-series of fetal MRI acquisitions, enabling fast construction of biomedical image atlases
- Proposed to frame subject-specific atlas building as learning a neural field of deformable spatiotemporal observations
- Yielded high-quality atlases with competitive registration performance and ~5-7 times faster convergence compared to existing work

CCB Fintech Company

07/2022 – 08/2022 | Nanjing, Jiangsu, China

Java Developer Intern

- Contributed to the "Wuxi Housing Service Unified Platform" project, streamlining the entire property area management process into an online platform, enhancing overall efficiency
- Developed key system functionalities, including interfaces, and wrote testable Java code that received 95% positive feedback from mentors
- Discovered and fixed 10+ programming bugs

PROJECTS

Chinese Chess

11/2022 – 01/2023

ShanghaiTech CS181: Artificial Intelligence

- Developed a Chinese Chess game from scratch using Python and C++, featuring a user-friendly game interface for human players
- Designed and implemented three AI agents using MinMax Search, Q-Learning, and Monte-Carlo Tree Search algorithms
- Achieved a 100% win rate with these AI agents against a random agent implemented with a randomized algorithm

ACTIVITIES

Teaching Assistant in Algorithm and Data Structures

09/2022 – 01/2023

ShanghaiTech, Shanghai, China

SKILLS

- **Languages:** Python, C/C++, Java, MATLAB, R, RISC-V
- **Technologies/Frameworks:** PyTorch, Numpy, Markdown, Git, ITK-SNAP