

Ruru Xu

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[Personal webpage](#)

[Google scholar page](#)

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PROFILE

I am a PhD student at Istanbul Technical University, Computer Engineering, where I have studied since 2021. I work as a researcher in the 2232 International Fellowship for Outstanding Researchers Program of TUBITAK(Project No: 118C353) and the ITU BAP research funds (Project ID: 47296). My research focuses on MRI reconstruction using deep learning and reinforcement learning methods. My professor is Ilkay Oksuz.

From 2018 to 2020, I was an exchange student at the Lab of Interactive Media Computing at Fudan University. During this time, I was working on projects related to autonomous driving, which involved object detection, pedestrian recognition, path planning, etc., working under the guidance of Professor Cheng Jin.

From 2017 to 2020, I pursued my Master's studies at the SICT(Shanghai Institute of Computing Technology), with a research direction in computer vision. My professor is Xinli Min.

From 2017 to 2020, I interned at Shanghai Shen Teng Technology Co., Ltd. . My work there involved contributing to smart city-related projects.

In 2016, I earned my Bachelor's degree in Computer Science and Technology.

EDUCATION and RESEARCH EXPERIENCE

PhD Candidate, GPA: 3.43,

March 2021-present

Computer Engineering

Istanbul Technical University, Istanbul, Turkey

Exchange learning,

April 2018-March 2020

Lab of Interactive Media Computing

Fudan University, Shanghai, China

Master's Degree, GPA: 3.78,

September 2017-March 2020

Engineering Computer Software and Theory

Shanghai Institute of Computing Technology(SICT), Shanghai, China

Thesis: Research and Implementation of Intelligent Evaluation Algorithm of Street Cleanliness Based on Vision **Online**

Bachelor's degree,

September 2012-July 2016

Computer Science and Technology

Liaocheng University, Liaocheng, China

Work Experience

Student Intern,

September 2017-March 2020

R&D department

Shanghai Shen Teng Technology Co., Ltd., Shanghai, China

Working on smart city related projects

PUBLICATIONS

Journal Papers:

- **Xu R**, Oksuz I. “Optimized K-Space Under-sampling for Brain MRI Reconstruction with Reinforcement Learning.” Pattern Recognition Letters (Q1; IF:3.9) [Under Review, Revise stage]
- Wang F, ...etc..**Xu R**, Oksuz I...etc., Towards Universal Learning-based Model for Cardiac Image Reconstruction: Summary of the CMRxRecon2024 Challenge. (**Top** Journal: Nature Machine Intelligence; IF:23.9) Under Review **Online**
- **Xu R**, Oksuz I. A Reinforcement Learning Approach for Optimized MRI Sampling with Region-Specific Fidelity. Neurocomputing (Q1, IF: 5.5), 2025. **Online Code**
- **Xu R**, Oksuz I. Segmentation-aware MRI subsampling for efficient cardiac MRI reconstruction with reinforcement learning. Image And Vision Computing (Q1, IF: 4.2), 2024. **Online**

Conference Papers:

- **Xu R**, Oksuz I. “HierAdaptMR: Cross-Center Cardiac MRI Reconstruction with Hierarchical Feature Adapters” (MICCAI 2025 CMRxRecon Challenge paper) **Online Code**
- **Xu R**, Oksuz I. “Adaptive k-space Radial Sampling for Cardiac MRI with Reinforcement Learning” (MICCAI 2025 STACOM Workshop) **Online Code**
- **Xu R**, Özer C, Oksuz I. HyperCMR: Enhanced Multi-Contrast CMR Reconstruction with Eagle Loss. (MICCAI 2024 CMRxRecon Challenge paper). **Online Code Presentation**
- **Xu R**, Oksuz I. Efficient MRI reconstruction with reinforcement learning for automatic acquisition stopping. (MICCAI 2022, STACOM Workshop). **Online Presentation**

- **Xu R**, An J, Su L, Min X. Banknotes serial number coding recognition.” In 2019 IEEE International Conference on Big Data (Big Data), pp. 5101-5107. IEEE, 2019. Online

HONORS and AWARDS

5th Place Award, CMRxRecon2024 Challenge (MICCAI)2024, Morocco **October 2024**
Certification

Full Ph.D. Scholarship, **March 2021-present**
 Istanbul Technical University, Istanbul, Turkey

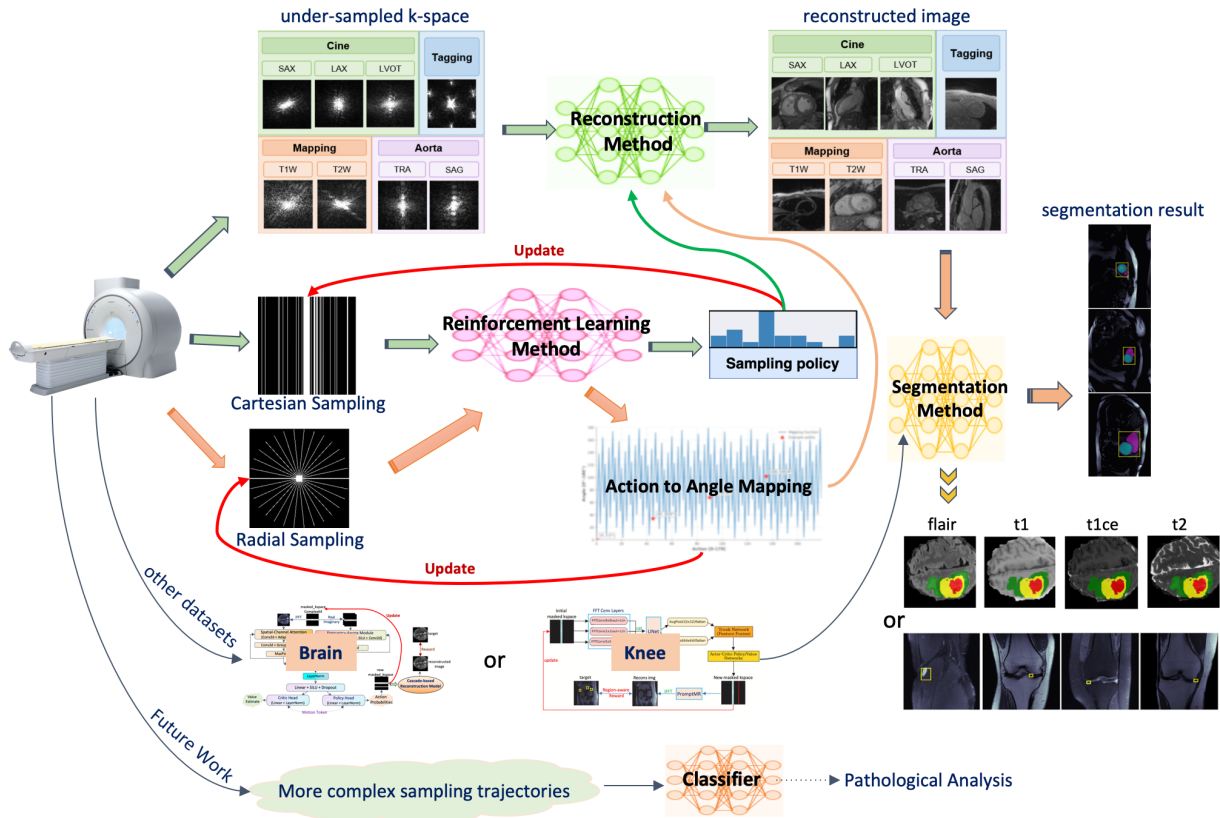
TOEFL score

- Score: 108 · Jan 2021, Reading:28, Listening:26, Speaking:24, Writing:30

REFERENCES

- Ilkay Oksuz
 Assoc. Prof., Istanbul Technical University, Computer Engineering Department
 Research Associate, King's College London, Biomedical Engineering Department
 E-mail: oksuzilkay@itu.edu.tr
- Cheng Jin
 School of Computer Science, Shanghai Key Lab of Intelligent Information Processing,
 Fudan University, Shanghai, China
 Innovation Center of Calligraphy and Painting Creation Technology, MCT, China,
 Fudan University, Shanghai, China
 E-mail: jc@fudan.edu.cn
- Xinli Min
 Shanghai Energy saving Engineering and Technology Association (SESETA)
 Shanghai Shen Teng Technology Co., Ltd.
 E-mail: mizhui@sina.com

PhD Research Topic



Timeline:

March 2021–June 2022, completed all courses, GPA: 3.43

(Artificial Intelligence, Machine Learning, Medical Image Computing, Deep Learning, Image Processing, Special Topics in Compu.Eng., Scien.Res., Ethic&Seminar, Guided Research)

–May 2023, Successfully passed the Doctoral Qualification Examination, became PhD Candidate

(Undergraduate Courses — Digital Circuits, Formal Languages, Automata Computer Architecture, Microprocessor Systems, Data Structures Analysis of Algorithms, Operating Systems

Graduate Courses — Probability Theory and Stochastic Processes, Pattern Recognition, Graph Theory and Algorithms, Deep Reinforcement Learning, Machine learning, Medical Image Computing

Oral Exam — basic engineering education (mathematics, probability, programming, algorithm design, hardware components, etc.))

January 18, 2024, Passed the PhD thesis proposal defense

August 2, 2024, Passed the PhD thesis 1st Report defense (Two papers:

The first paper was accepted by MICCAI 2022, Workshop

The second paper was accepted by journal Image and Vision Computing(Q1, IF: 4.2))

January 16, 2025, Passed the PhD thesis 2nd Report defense (Three papers + One MICCAI Challenge Award:

The first paper was accepted by MICCAI 2024, workshop

The second paper was accepted by journal Neurocomputing(Q1, IF: 5.5)

The third paper was submitted to Top Journal: Nature Machine Intelligence; IF:23.9, under review

5th Place Award in MICCAI 2024 Reconstruction Challenge)

July 9, 2025, Passed the PhD thesis 3rd Report defense (Three papers + Two MICCAI Challenges:

Two papers was accepted by MICCAI 2025, workshop

The third paper was submitted to journal Pattern Recognition Letters (Q1; IF:3.9) [Under Review, Revise stage]

One of the top five teams on the leaderboard in MICCAI 2025 two Reconstruction Challenges)

Now: working on TMI journal paper work.