Ruru Xu

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Academic webpage
Google scholar page

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, Instance segmentation, 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 Cleanli-

ness 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. "Undersampled K-Space Information Recovery with Long-Range Temporal Memory for Multi-Coil MRI Reconstruction." [Top journal: MIA, IF: 11.8, Under Review]
- **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: TMI; IF:9.8) [Under Review, Revise stage] **Online**
- **Xu R**, Oksuz I. A Reinforcement Learning Approach for Optimized MRI Sampling with Region-Specific Fidelity. Neurocomputing (Q1, IF: 6.5), 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" (MICCAI2025 Workshop, Oral Presentation) **Online Code**
- **Xu R**, Oksuz I. "Adaptive k-space Radial Sampling for Cardiac MRI with Reinforcement Learning" (MICCAI2025 Workshop, Oral Presentation) **Online Code Presentation**
- **Xu R**, Özer C, Oksuz I. HyperCMR: Enhanced Multi-Contrast CMR Reconstruction with Eagle Loss. (MICCAI2024 Workshop, Oral Presentation). **Online Code Presentation**

- **Xu R**, Oksuz I. Efficient MRI reconstruction with reinforcement learning for automatic acquisition stopping. (MICCAI2022 Workshop, Oral Presentation. **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

Top 5 teams on leaderboard in CMRxRecon2025 Two Special Tasks, Final rank will be announced at the SCMR 2026, Brazil. Our Abstract paper has been accepted for an in-person presentation **February 2026**

5th Place Award, Regular Task 1: CMR reconstruction model for multi-center evaluation. CMRxRecon2025 Challenge (MICCAI)2025, South Korea **September 2025**
Certification

3rd Place Award, Regular Task 2: CMR reconstruction model for multiple diseases evaluation. CMRxRecon2025 Challenge (MICCAI)2025, South Korea **September 2025**
Certification

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

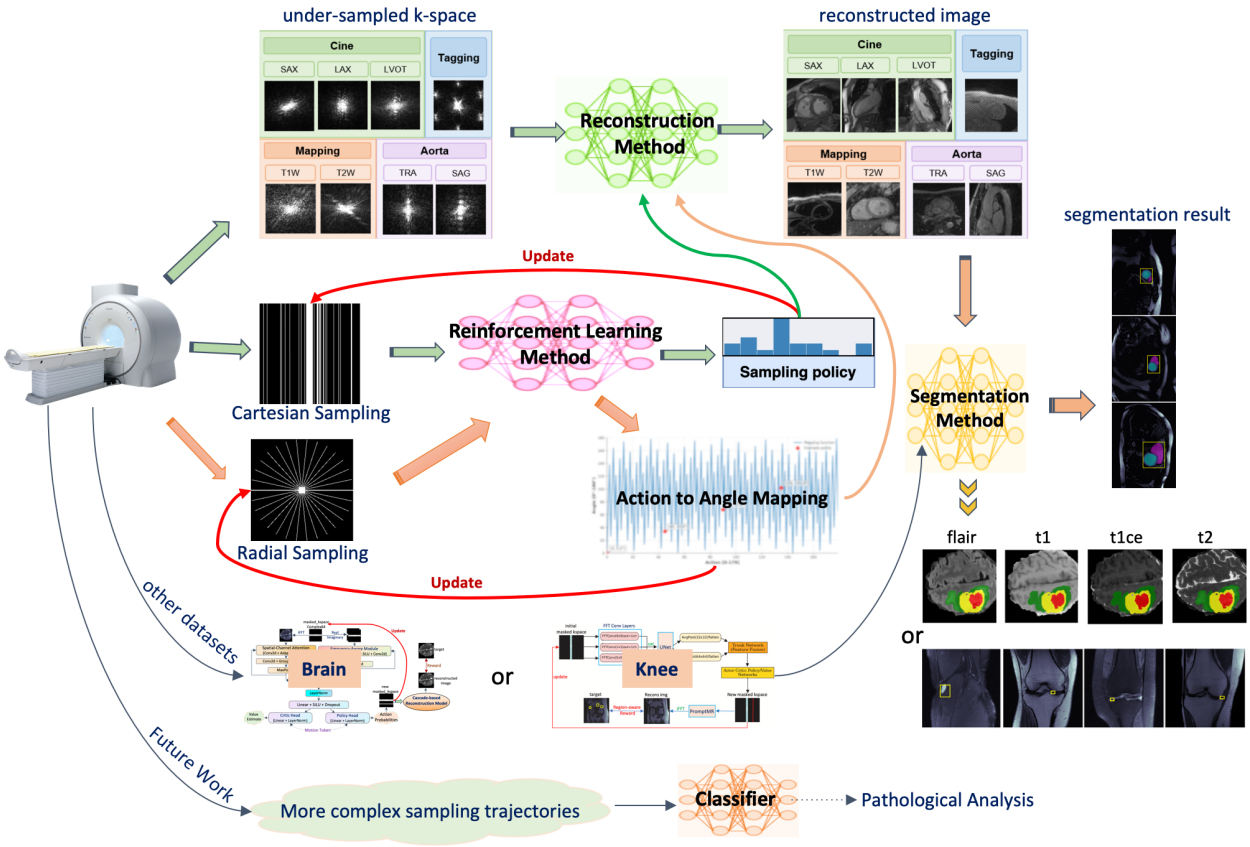
REFERENCES

- 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.Rese., 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]
MICCAI 2025, ranked 5th in Challenge Task 1 and 3rd in Challenge Task 2.)

Now: working on TMI journal paper work.

Looking for Postdoctoral Position

I will graduate in December 2025. Looking for a postdoctoral position for the spring 2026 semester in the US.