Ruru Xu

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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). 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
- 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.
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