

# FENGRUI TIAN 田丰瑞

Master Student, School of Artificial Intelligence, Xi'an Jiaotong University

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## PERSONAL STATEMENT

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I strongly believe that Artificial Intelligence (AI) technology will deeply change the way that people live and work in the future. My research interests include novel view synthesis and self-supervised learning.

I'm also looking for Ph.D. position in autumn 2024. If you are interested in my background and have some available positions, please let me know.

## EDUCATION

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**School of Artificial Intelligence, Xi'an Jiaotong University**

Expected 2024

*Recommended Postgraduate*

M.S., Control Science and Engineering

Supervisor: Prof. Shaoyi Du

GPA: 4.0/4.0

**School of Software Engineering, Xi'an Jiaotong University**

2017 - 2021

*Outstanding Undergraduate Thesis (Top 1%)*

B.S., Software Engineering

Supervisor: Prof. Zhiqiang Tian

GPA: 3.6/4.0

## EXPERIENCE

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**Tsinghua University, Shanghai AI Laboratory, SenseTime Group Ltd.**

Mar. 2022 - Present

Research Intern, Supervisor: Prof. Yueqi Duan and Prof. Jifeng Dai

*Beijing*

- Researched 3D dynamic new view synthesis from monocular videos.
- Proposed a generalizable dynamic radiance field from monocular videos called MonoNeRF.
- MonoNeRF reaches the state-of-the-art performance on novel view synthesis and supports several new applications such as novel view synthesis from unseen frames, fast new scene adaption and scene editing.

**Megvii Research**

Apr. 2021 - Jan. 2022

Research Intern

*Beijing*

- Research on fine-grained video representation with self-supervised learning (SSL).
- Proposed a video representation learning network called TCVM based on feature differences. It directly captures motion information by frame feature difference.
- Won the Outstanding Intern Award (the only one in the group).

**Xi'an Jiaotong University**

Apr. 2020 - Oct. 2021

Research Assistant, Supervisor: Prof. Zhiqiang Tian

*Xi'an, Shaanxi*

- Dedicated to applying deep learning technology in medical image analysis to the real world by combining human interaction and segmentation algorithms.
- Focused on combining radiologists' interaction experience with deep learning models.
- Proposed an interactive segmentation method called Surface-GCN that learns radiologist interaction experience from imitations.

**National University of Singapore**

Sep. 2019

Team Leader

*Singapore*

- Organized other three team members to detect potential connections between movies and books with data on Douban website by data mining algorithms.

## PUBLICATIONS

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# Equal contribution, (✉) Corresponding author

- [1] **Fengrui Tian**, Shaoyi Du, Yueqi Duan(✉), MonoNeRF: Learning a Generalizable Dynamic Radiance Field from Monocular Videos, *Under Review*, 2022.
- [2] **Fengrui Tian**<sup>#</sup>, Jiawei Fan<sup>#</sup>, Xie Yu, Shaoyi Du(✉), Meina Song, and Yu Zhao, TCVM: Temporal Contrasting Video Montage Framework for Self-supervised Video Representation Learning, *Asian Conference on Computer Vision (ACCV)*, pp. 1539-1555. 2022. (**Oral, Best Paper Award Honorable Mention**)
- [3] **Fengrui Tian**, Zhiqiang Tian(✉), Zhang Chen, Dong Zhang, Shaoyi Du(✉), Surface-GCN: Learning Interaction Experience for Organ Segmentation in 3D Medical Images, *Under Review*, 2021.
- [4] Chenhong Tian, **Fengrui Tian**, Xiaozhi Du(✉), Checkpoint Optimization Approach with Application Multiple-state for Real-time Embedded System, *Technical Report*, 2020.

## PROJECTS

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**Books2Movies.** Analyzed the relationship between 105 user groups and 8 different types of books and the relationship between 117 movies and different groups of users and then established the connection "books-users-movies" based on those 2 relationships. This work was done when **Fengrui Tian** attended the summer program at the School of Computing, National University of Singapore. (Try it here: <https://tianfr.github.io/Books2Movies/>)

## AWARDS

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- **ACCV Best Paper Award Honorable Mention (2/278)** 2022
- Special Scholarship (**Top 10%**), Xi'an Jiaotong University 2022
- Outstanding Undergraduate Thesis (**Top 1%**), Xi'an Jiaotong University 2021
- Third Prize Scholarship (**Top 25%**), Xi'an Jiaotong University 2019, 2020
- Bronze medal in China College Computing Contest Group (CCCC) Programming Ladder Tournament 2019.4

## SKILLS AND OTHERS

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MMCV issue #2309, bug P1 report: <https://github.com/open-mmlab/mmcv/issues/2309>

Language: Chinese (mother tongue), English (TOEFL 92, CET-6 546)