Ruchang Yao

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EDUCATION

Tsinghua University   Beijing, China
Mathematics and Physics + Software Engineering , Weiyang College   Aug 2022 - Jun 2026
GPA: 3.96/4.00, Rank: 2/90

AWARD

- National Scholarship   Ministry of Education, Dec 2024
- Academic Excellence Scholarship   Tsinghua Univ., Nov 2024
- The Mathematical Contest in Modeling (MCM/ICM) H prize   COMAP, May 2024
- Overall Excellent Student Scholarship   Tsinghua Univ., Nov 2023
- Academic Excellence Scholarship   Tsinghua Univ., Nov 2023

PUBLICATION

Wenbin Lin, **Ruchang Yao**, Jiaqi Li, Jun-Hai Yong, Feng Xu

FlyHuman: On-the-fly Feature Aggregation for Real-time Free-viewpoint Dynamic Human Video from Sparse Views
TVCG under review

RESEARCH EXPERIENCE

Efficient 3D Reconstruction   Dec 2024 - Now
Tsinghua Univ. Prof Yushen Liu
· We are to align 3DGS with SDF for accurate 3D expression and reconstruction.

Infographics Analysis and Generation   Aug 2024 - Feb 2025
Tsinghua Univ. Prof Shixia Liu
· This project is for Tsinghua Challenge Cup. I am the co-first author.
· I initially researched training strategies to prevent overfitting in the presence of sample noise and improve training performance, including methods like OOB and Shapley Value.
· We proposed a three-stage method to generate infographics, which started with a visual elements recommendation system, followed by MCTS based layout method, and ended up with a color adjustment strategy.
· I designed a pipeline to recommend visual elements with SAM, vLLM and CLIP, and finetuned a CNN model to extract layout.

Real-time Human Reconstruction from Sparse Views   Aug 2023 - May 2024
Tsinghua Univ. Prof. Feng Xu
· The second author of a paper titled "FlyHuman: On-the-fly Feature Aggregation for Real-time Free-viewpoint Dynamic Human Video from Sparse Views" is currently under review of TVCG.
· I built a complete workflow from camera calibration, image preprocessing, human keypoints extraction, mesh reconstruction, to post-processing effect segmentation and display.

SKILL

- c/c++/c#, python, javascript/typescript, html/css
- torch, react/next, docker, Qt, SQL, Unity

ACTIVITIES

Served as the vice president of the Student Science and Technology Association at Weiyang college.