Liangwang Ruan

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EDUCATION

School of Computer Science, Peking University — Beijing
Ph.D. of Computer Science, in process, advised by Prof. Baoquan Chen — *Sep 2021 — Now*

Yuanpei College & Turing Class — Beijing
Bachelor of Science, in Artificial Intelligence, Summa Cum Laude; GPA: 3.72 — *Sep 2017 — June 2021*

RESEARCH INTERESTS

My research interests focus on computer graphics, with a particular emphasis on physics-based animations. I aim to push the boundaries of existing methods to achieve greater realism and efficiency. Additionally, I am interested in exploring the intersection of traditional numerical algorithms and deep learning techniques.

PUBLICATIONS

MiNNIE: a Mixed Multigrid Method for Real-time Simulation of Nonlinear Near-Incompressible Elastics
ACM Transactions on Graphics (SIGGRAPH Asia, Journal Track), 2024
Liangwang Ruan, Bin Wang, Tiantian Liu, Baoquan Chen

A Vortex Particle-on-Mesh Method for Soap Film Simulation
ACM Transactions on Graphics (SIGGRAPH North America, Journal Track), 2024
Ningxiao Tao, **Liangwang Ruan**, Yitong Deng, Bo Zhu, Bin Wang, Baoquan Chen

Position-Based Surface Tension Flow
ACM Transactions on Graphics (SIGGRAPH Asia, Journal Track), 2022
Xingrui Xing[*], **Liangwang Ruan**[*], Bin Wang, Bo Zhu, Baoquan Chen ([*] for joint first author)
- covered in Technical Papers Trailer

Solid-Fluid Interaction with Surface-Tension-Dominant Contact
ACM Transactions on Graphics (SIGGRAPH North America, Journal Track), 2021
Liangwang Ruan[*], Jinyuan Liu[*], Bo Zhu, Shinjiro Sueda, Bin Wang, Baoquan Chen ([*] for joint first author)
- cited in Nature Physics: The flow from simulation to reality
- covered in Two Minute Papers: A Simulation That Looks Like Reality!
- covered in Technical Papers Trailer

PATENTS

- A software for simulating fluid-solid coupling with strong surface tension: CN113283066B

TEACHING ACTIVITIES

- Co-teach the online course GAMES001: Mathematics in Computer Graphics, over 53k views (up to Sep 2024) on bilibili
- Co-author of the first part of the online textbook Visual Computing
- TA of Visual Computing, Peking University, Fall 2023, Fall 2022, Spring 2022
- TA of Practice on topics of Frontier Computing, Peking University, Fall 2021, Spring 2021

INTERNSHIPS

AICFVE, Beijing Film Academy — Beijing
Research Assistant, advised by Bin Wang — *2019 — 2021*

HONORS AND AWARDS

- Award for Scientific Research, Peking University, Dec 2023
- John Hopcroft Scholarship, Nov 2020
- Merit Student, Peking University, Dec 2018
- Founder Scholarship, Dec 2018
- Gold Medal in 33th Chinese Physics Olympiad (CPhO), Nov 2016