

YUCHEN SUN

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EDUCATION BACKGROUND

School of EECS, Peking University

2018.09 - 2022.07

- Bachelor of Science
- Major: Computer Science and Technology

Guarini School of Graduate and Advanced Studies, Dartmouth College

2022.09 - present

- PhD Student
- Major: Computer Science
- Advisor: Bo Zhu

PUBLICATION

Yuchen Sun*, Xingyu Ni*, Bo Zhu, Bin Wang, Baoquan Chen. A Material Point Method for Nonlinearly Magnetized Materials. ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia), 40(6), December 2021.

RESEARCH EXPERIENCE

A Material Point Method for Nonlinearly Magnetized Materials

2020.10 - 2021.05

Advisor: Prof. Bo Zhu at Dartmouth College and Prof. Baoquan Chen at Peking University

- Proposed a hybrid Lagrangian-Eulerian framework for magnetic simulation.
- Devised an effective numerical scheme to incorporate the nonlinear magnetic forces into the MPM framework.
- Developed an efficient Newton-based algorithm to solve the nonlinear equations of magnetization on a Cartesian grid.

A Variational Framework for Solid-Fluid Coupling

2020.08 - 2020.09

Advisor: Prof. Baoquan Chen at Peking University

- Implemented an optimization-based framework for accurately incorporating irregularly shaped rigid objects into standard grid-based fluid simulations.
- Enabled solid-fluid simultaneous coupling applicable to arbitrary solid dynamics.

3D Incompressible Fluid Simulation

2020.06 - 2020.07

Advisor: Prof. Baoquan Chen at Peking University

- Implemented a solver from scratch, using projection method on 3D MAC grid to solve low-Reynolds incompressible flow with free surface.

ADDITIONAL EXTRACURRICULAR EXPERIENCE

Director General of the Tennis Association at Peking University.

2021.09 - 2022.03

AWARDS AND HONORS

- The Second Prize of Peking University Scholarship 2019.12
- Merit Student of Peking University 2019.12
- Silver Medalist of 34th Chinese Physics Olympiad 2017.10

SKILLS

C/C++, Java, Python, Taichi, Latex, MatLab, Houdini, CUDA, OpenGL, Machine Learning, Data Structures.