

# Yue Chang

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changy1506.github.io

## Research

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My research explores shape spaces, with a focus on representing core properties such as eigenfunctions and discontinuities of shape families. I develop novel methods to capture these properties, enabling applications in design and simulation. This work paves the way for new possibilities in shape optimization and physics-based simulation.

## Education

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**University of Toronto, Canada** 2022 – Present  
Ph.D. in Computer Science  
**Advisor:** Eitan Grinspun

**Peking University, China** 2019 – 2022  
M.Sc. in Computer Technology  
**Advisors:** Xiaowei He, Sheng Li, Guoping Wang

**Beihang University, China** 2015 – 2019  
B.S. in Computer Science and Technology

## Publications

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### Shape Space Spectra

**Yue Chang**, Otman Benckekroun, Maurizio M. Chiaramonte, Peter Yichen Chen, Eitan Grinspun  
*SIGGRAPH North America*, 2025 **[Best Paper Award]**

### Lifting the Winding Number: Precise Discontinuities in Neural Fields for Physics Simulation

**Yue Chang**, Mengfei Liu, Zhecheng Wang, Peter Yichen Chen, Eitan Grinspun  
*SIGGRAPH North America*, 2025 **[Best Paper Award Honorable Mention]**

### Fast Subspace Fluid Simulation with a Temporally-Aware Basis

Siyuan Chen, Yixin Chen, Jonathan Panuelos, Otman Benckekroun, **Yue Chang**, Eitan Grinspun, Zhecheng Wang  
*SIGGRAPH North America*, 2025

### A Dual-Particle Approach for Incompressible SPH Fluids

Shusen Liu, Xiaowei He, Yuzhong Guo, **Yue Chang**, Wencheng Wang  
*ACM TOG, Presented at SIGGRAPH North America*, 2024

### Reduced-Order Neural Operators: Learning Lagrangian Dynamics on Highly Sparse Graphs

Hrishikesh Viswanath, **Yue Chang**, Aleksey Panas, Julius Berner, Peter Yichen Chen, Aniket Bera  
*arXiv:2407.03925*, 2024

### LiCROM: Linear-Subspace Continuous Reduced Order Modeling with Neural Fields

**Yue Chang**, Peter Yichen Chen, Zhecheng Wang, Maurizio M. Chiaramonte, Kevin Carlberg, Eitan Grinspun  
*SIGGRAPH Asia*, 2023

### CROM: Continuous Reduced-Order Modeling of PDEs Using Implicit Neural Representations

Peter Yichen Chen, Jinxu Xiang, Dong Heon Cho, **Yue Chang**, G A Pershing, Henrique Teles Maia, Maurizio M. Chiaramonte, Kevin Carlberg, Eitan Grinspun  
*ICLR*, 2023 **[Notable-top-25%][Best Paper Award at Neural Fields Workshop]**

### Semi-analytical Solid Boundary Conditions for Free Surface Flows

**Yue Chang**, Shusen Liu, Xiaowei He, Sheng Li, Guoping Wang  
*Computer Graphics Forum (Pacific Graphics)*, 2020

Software

Open-Source Physics Simulation Platforms: PhysIKA and Peridyno

Contributor and Core Developer

2019.09 – 2022.07

Work Experience

Meta Reality Lab | Research Intern | Mentored by Maurizio M. Chiaramonte

MEGVII (Face++) | Research Intern | Mentored by Huanyu Liu and Zhicheng Wang

2025.06 – 2025.12

2019.04 – 2019.11

Talks

Shape Space Spectra

SIGGRAPH North America | Technical Paper Presentation

Vancouver (Canada) | 2025.08

Lifting the Winding Number: Precise Discontinuities in Neural Fields for Physics Simulation

SIGGRAPH North America | Technical Paper Presentation

Vancouver (Canada) | 2025.08

Fast Physics through Eigenanalysis over the Shape Space

SimVision @ CVPR 2025 Workshop | Technical Talk

ROM for Physical Simulation @ SIGGRAPH Workshops | Technical Talk

Nashville (United States) | 2025.06

Vancouver (Canada) | 2025.08

Neural Representation of Shape-Dependent Laplacian Eigenfunctions

GRAPHQUON | Technical Presentation

Quebec (Canada) | 2024.11

LiCROM: Linear-Subspace Continuous Reduced Order Modeling with Neural Fields

SIGGRAPH Asia | Technical Paper Presentation

CSIG SIGGRAPH Webinar Series | Hosted by Prof. Mengyu Chu

Sydney (Australia) | 2023.12

Virtual | 2023.12

Semi-analytical Solid Boundary Conditions for Free Surface Flows

Pacific Graphics | Technical Paper Presentation

Virtual | 2021.10

Services

University of Toronto CS Academy | Mentor

Queer in Computational and Applied Mathematics Workshop | Course Material Developer

2025.03

2024.06