

# Litian Zhang

+86-18801127715 | [litzzhang@gmail.com](mailto:litzzhang@gmail.com) | [litzzhang.github.io](https://litzzhang.github.io)

## RESEARCH INTEREST

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Physics-based Simulation, Numerical Optimization



## EDUCATION

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- **Tsinghua University** September 2020 - June 2025 (Expected)  
*B.S. Mechanics & B.E Civil Engineering System* Beijing, China
  - GPA: 3.6/4.0
  - Selected Graduate Coursework: Tensor Analysis, Numerical Methods for Partial Differential Equation, Physics-Based Simulation





## EXPERIENCE

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- **Multimedia Lab, École de technologie supérieure**  June 2023 - September 2023  
*Mitacs Globalink Intern* Advisor: **Eric Paquette**
  - Focusing on texture synthesis for Fluid in 3D
  - Using diffusion model to generate textures on liquid surfaces that change shape over time
  - Design Neural Networks to generate seamless textures in u-v coordinate to improve texture fidelity
- **Visual Computing and Learning Lab, Peking University**  November 2023 - present  
*Research Intern* Advisor: **Mengyu Chu**
  - Replicate **shallow water simulation** in 1D/2D and use upwind scheme to reduce numeric error
  - Focusing on solving **free surface fluid** with recent Monte Carlo method, design special interface treatment for signed distance field reinitialization
  - Implement **Walk on Stars** algorithm to solve pressure Poisson equation, try to solve boundary value problem varies between dirichlet condition and neumann condition

## PROJECTS

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- **Multigrid Poisson Solver** March 2023  
*Final Project for Numeric PDE in Matlab* Repo[
- **SPH Solver** October 2023  
*Implement basic WCSPH method with C++ and OpenGL* Repo[
- **Eulerian Fluid Solver** November 2023  
*Implement pure grid method for fluid simulation in C++ with levelset method* Repo[
- **Codimensional Incremental Potential Contact for Cloth** June 2024  
*Implement C-IPC for collision handling in cloth simulation* Repo[

## SKILLS

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- **Programming Languages:** C, C++, Python, C#, Matlab
- **Technologies:** Git, LaTeX, CMake, Xmake, Blender
- **Language:** TOEFL 109 (Speaking: 23, Writing: 28), GRE 329 (Verbal: 159, Quant: 170, AWA: 3.5)