

# Litian Zhang(张力天)

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## EDUCATION

**Tsinghua University, Xijian College**

September 2020 - present

- Bachelor of Mechanics and Civil Engineering System
- Academic Performance: 3.6/4.0

## RESEARCH EXPERIENCE

**Texture synthesis for Fluid in 3D**

July 2023 - Sep 2023

- Mitacs Globalink Internship, advisor: **Prof. Eric Paquette**
- Using diffusion model to generate textures on liquids surfaces that change in shape through time
- Design Neural Networks to generate seamless textures in u-v coordinate to improve texture fidelity

**Physics-based Simulation Research Intern**

Nov 2023 - present

- Research Intern at **Visual Computing and Learning Lab** in Peking University

## PROJECTS

**Multigrid Poisson Solver**

March 2023

*Major Project as a part of course Numerical Methods for Partial Differential Equations*

- Implement multigrid method for poisson equation with Matlab

*Project Repo*

**SPH Solver**

October 2023

*Implement basic smooth particle hydraulic solver with WCSPH*

- Implement Weekly Compressed SPH method C++ and OpenGL

*Project Repo*

**Euler Fluid Solver**

November 2023

*Implement pure grid method for fluid simulation with signed distance function.*

- Implement Grid-based method for fluid simulation with C++, using Eigen for conjugate gradient solver. *Project Repo*

## SKILLS

**Programming**

C, C++, Python, Matlab, Shell, Git, OpenGL, Latex

**Language**

Chinese (native), English (with GRE 329 + 3.5 and TOEFL 109)

## SELECTED COURSES

**Tensor: Structures, Analysis and Applications**

2021 Autumn

*Graduate Level Course*

- Focused on tensor properties and its application in Continuum Mechanics

**Numerical Methods for Partial Differential Equations**

2023 Spring

*Graduate Level Course*

- Covering major numeric framework for elliptic, hyperbolic, parabolic equations(FDM, FVM, FEM)