Zhiqi Li

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Education

Georgia Institute of Technology — Atlanta, US
Ph.D. in Computer Science *GPA: NA* — *Aug. 2025 - May. 2028(expected)*

Georgia Institute of Technology — Atlanta, US
M.S. in Computer Science *GPA: 4.00/4.00* — *Aug. 2023 - May. 2025*

Zhejiang University — Hangzhou, China
B.Eng. in Computer Science, B.S. in Applied Mathematics *GPA: 3.97/4.00* — *Sep. 2019 - Aug. 2023*

Research Interests

Currently, my research focuses on flow matching for image and geometry generation, as well as EditFlow and discrete flow matching/masked diffusion for large language models and geometry generation. Previously, I worked on differentiable physics-based simulation in computer graphics, as well as deep learning and virtual reality.

Honors and Awards

Best Paper Awards of SIGGRAPH Asia 2024 2024
granted by ACM

Honorable Mention for Best Paper Award of SIGGRAPH 2025 2025
granted by ACM

Publications

1. Functional Mean Flow in Hilbert Space arxiv
Zhiqi Li, *Yuchen Sun, Greg Turk, Bo Zhu* *Note: for image and shape generation*

2. An Adjoint Method for Differentiable Fluid Simulation on Flow Maps SIGGRAPH Asia,2025
Zhiqi Li*, Jinjin He*, etc. , Greg Turk, Bo Zhu (* co-first author)* *Conference Track*

3. Improving Model Fusion by Training-time Neuron Alignment with Fixed Neuron Anchors Minor Revision TPAMI
Zexi Li, ***Zhiqi Li****, etc. ,Chao Wu*

4. Language Models are Symbolic Learners in Arithmetic Under Review TMLR
Chunyuan Deng, ***Zhiqi Li****, Roy Xie, Ruidi Chang, Hanjie Chen*

5. Fluid Simulation on Compressible Flow Maps SIGGRAPH,2025
Duowen Chen, ***Zhiqi Li****, etc. , Bart G. Van Bloemen Waanders, Bo Zhu (* co-first author)* *Journal Track*

6. EDGE: Epsilon-Difference Gradient Evolution for Buffer-Free Flow Maps SIGGRAPH,2025
Zhiqi Li*, Ruicheng Wang*, Junlin Li*, Duowen Chen, Sinan Wang, Bo Zhu (* co-first author)* *Journal Track*

7. Clebsch Gauge Fluid on Particle Flow Maps SIGGRAPH,2025
Zhiqi Li*, Candong Lin, Duowen Chen, Xinyi Zhou, Shiying Xiong, Bo Zhu* *Honorable Mention*

8. Fluid Simulation on Vortex Particle Flow Maps SIGGRAPH,2025
Sinan Wang, Junwei Zhou, Fan Feng, ***Zhiqi Li****, Yuchen Sun, Duowen Chen, Greg Turk, Bo Zhu* *Journal Track*

9. A Fast Eulerian Impulse Method on Flow Maps SIGGRAPH,2025
Yuchen Sun, Junlin Li, Ruicheng Wang, Sinan Wang, ***Zhiqi Li****, etc. , Bo Zhu* *Journal Track*

10. Making Local Models More Connected in Landscape for Federated Learning SIGKDD, 2025
Zexi Li, Jie Lin*,* ***Zhiqi Li****, Didi Zhu, Chao Wu (* co-first author)*

11. Particle-Laden Fluid on Flow Maps SIGGRAPH Asia,2024
***Zhiqi Li**, Duowen Chen, Candong Lin, Jinyuan Liu, Bo Zhu* *Best Paper Award*

12. Lagrangian Covector Fluid with Free Surface SIGGRAPH,2024
***Zhiqi Li**, Barney (Barnabás) Börcsök, Duowen Chen, Yutong Sun, Bo Zhu, Greg Turk* *Conference Track*

13. Solid-Fluid Interaction on Particle Flow Maps SIGGRAPH Asia,2024
*Duowen Chen, **Zhiqi Li**, Junwei Zhou, Fan Feng, Tao Du, Bo Zhu* *Journal Track*

14. Enhancing Immersive 3D Video Communication with Hand Touch IEEE VR,2023
Yizhong Zhang, **Zhiqi Li***, *etc , Jiaolong Yang, Xin Tong, Baining Guo (* co-first author)*

15. Federated Learning with Label Distribution Skew via Logits Calibration. ICML,2022
*Jie Zhang, **Zhiqi Li**, Bo Li, Jianghe Xu, Shuang Wu, Shouhong Ding, Chao Wu* *Spotlight*

16. Improving Group Connectivity for Generalization of Federated Deep Learning FL@FM-NIPS, 2024
Zexi Li, Jie Lin*, **Zhiqi Li***, *Didi Zhu, Chao Wu (* co-first author)*

17. Swift Parameter-free Attention Network for Efficient Super-Resolution. NTIRE-CVPR, 2024
Cheng Wan, Hongyuan Yu*, **Zhiqi Li***, *etc., Xuanwu Yin, Kunlong Zuo (* co-first author)*

Experience

Research Intern Jan. 2025 – Aug. 2025
Advisor: Prof. Bo Zhu *Epic Games*

- Applied Large Language Models (LLMs) to game development tasks and built interactive applications using Unity. Specifically, explored integrating LLM-based natural language understanding modules into game logic, implemented prototype systems in Unity to test conversational and generative AI features, and optimized workflows for seamless interaction between AI models and game engines.

Research Assistant May 2022 – Present
Advisor: Prof. Bo Zhu and Prof. Greg Turk *Georgia Tech, Dartmouth College*

- Through theoretical derivation, I proposed a new long-short flow map algorithm that extends the Covector Fluid method to particle-based methods and addresses free surface problems, leading to a breakthrough in vortex-preserving algorithms for free surfaces. This work is presented in the paper "Lagrangian Covector Fluid with Free Surface", published at SIGGRAPH 2024.
- I improved the particle flow map algorithm to enable it to simulate fluid flow involving complex phenomena such as viscosity, multiphase flow, and fluid-solid coupling. This enhanced algorithm was used to simulate new visual effects for laden flow and fluid-solid interaction. The results are presented in the papers "Particle-Laden Fluid on Flow Maps" and "Solid-Fluid Interaction on Particle Flow Maps", published at SIGGRAPH Asia 2024.
- I developed my own C++ simulation code library, Research-G, using it to simulate codimensional-1 fluid flows such as soap bubbles. Additionally, I proposed a new codimensional-1 adaptive SPH algorithm.

Research Intern Oct. 2021 – Oct 2022
Advisor: Dr. Yizhong Zhang and Dr. Xin Tong *Microsoft Research Lab - Asia, Internet Graphics Group*

- Improve VirtualCube system: For the virtual meeting system(refer to paper virtualCube: An Immersive 3D Video Communication System), I find a problem that hands close to the screen destroy the quality, and propose a method to remove the information of hand to improve the quality
- Develop RemoteTouch system: With the proposed dual representation of hands, we design and implement a video-communication system, which reconstructs the hands of users and allows users to clamp and touch with each other, with the sensors of Leap Motion. The results are presented in the papers "RemoteTouch: Enhancing Immersive 3D Video Communication with Hand Touch" published at IEEE VR, 2023