

Duowen CHEN

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EDUCATION

Georgia Institute of Technology – Atlanta, GA

Jan. 2024 – May 2027 (expected)

PhD Candidate in Computer Science

Dartmouth College – Hanover, NH

Sep. 2022 – Dec. 2023

PhD student in Computer Science

Columbia University - New York, NY

Sep. 2020 – Dec. 2021

Master of Science: Computer Science

- GPA: 4.14/4.33

University of Washington - Seattle, WA

Aug. 2016 – Jun. 2020

Bachelor of Science: Computer Science

- GPA: 3.87/4.00

RESEARCH

Research Assistant, Georgia Tech - Atlanta, GA

Dec. 2023 – Present

Supervisor: Prof. [Bo Zhu](#), School of Interactive Computing

- Fluid simulations based on flow map
- Generative AI under physics simulation regime with flow matching

Research Assistant, Dartmouth College - Hanover, NH

Sep. 2022 – Dec. 2023

Supervisor: Prof. [Bo Zhu](#), The Department of Computer Science

- Developed neural particle level set method for dynamic interface tracking and application for free-surface fluid simulation

Research Assistant, Columbia University - New York, NY

Oct. 2020 – Jun. 2022

Supervisor: Prof. [Changxi Zheng](#), The Department of Computer Science

- Improved FDTD simulation accuracy with irregular geometry using a data-driven method

Research Assistant, University of Washington - Seattle, WA

Dec. 2018 – Dec. 2020

Supervisor: Prof. [Adriana Schulz](#), Paul G. Allen School of Computer Science & Engineering

- Developed a BREP Dataset and a learning approach for Automatic Mating of CAD Assemblies

PROFESSIONAL EXPERIENCE

MLE Intern, Meta (MRS AI Knowledge) – Menlo Park, CA

May 2026 – Aug. 2026

- Introduced an adaptive multi-expert framework for flow matching method in recommendation system, with paper submission.
- Implement flow matching method for sequential recommendation for production pipeline and entered phase of online QE testing.

Multimedia Research Intern, Futurewei – Basking Ridge, NJ

Apr. 2025 – Jul. 2025

- Benchmarking SOTA video generation model capacity with fluid contents.
- Introduced a new fluid detail composing framework for fluid simulations using video generation model with paper presented at Eurographics.

Graphics Research Intern, Tencent America - New York, NY

Feb. 2022 – Jun. 2022

- Use deep learning to accelerate projective dynamics
- Implemented Python visualizer and wrapper of deformable simulation with the help of Blender python API and Pybind11

Software Engineer Intern, Adobe Inc. - Seattle, WA

Jun. 2019 – Sep. 2019

- Calculated clients' return on investment (ROI) on LinkedIn and auto-tagged LinkedIn Ads
- Automated and managed the capacity to search quickly among massive logs data by switching to Splunk

Software Engineer Intern, ApplySquare Education & Technology, Co, LTD - Beijing, CHN

Jun. 2018 – Aug. 2018

- Prototyped a WeChat mini program to aid task and project management for users in engineering teams and self-study groups

PUBLICATION

Duowen Chen, Liangwei Guo, Wei Liao, Yu Zheng, Chen Yuan, Yinglong Xia. FLARE-Rec: Flow Matching with Adaptive Retrieval Experts for Sequential Recommendation. *In submission*

Duowen Chen, Jinjin He, Gouthaman KV, Sandeep Bangalore Venkatesh, Bo Zhu. Audible World Models: Spatially Aware Sound Generation for 3D Worlds. *In submission*

Duowen Chen, Yuchen Sun, Zhiqi Li, Yuxuan Liao, Bart van Bloemen Waanders, Bo Zhu. A Simulation-Grounded VLM Framework for Agentic Wildfire Monitoring and Reporting *In submission*

Zhiqi Li*, **Duowen Chen***, Yuchen Sun* (joint first author), Bo Zhu. A Few-Step Generative Model on Cumulative Flow Maps. *ACM Transaction on Graphics (SIGGRAPH 2026)*

Duowen Chen, Zhiqiang Lao, Yu Guo, Heather Yu. Fluid Composer: Fluid Detail Composition and Rendering Using Video Diffusion Models. *Computer Graphics Forum (presented at Eurographics 2026)*

Zhiqi Li, Yuchen Sun, **Duowen Chen**, Jinjin He, Bo Zhu. Trajectory consistency for one-step generation on euler mean flows. *ICML 2026*

Duowen Chen*, Zhiqi Li* (joint first author), Taiyuan Zhang, Jinjin He, Junwei Zhou, Bart van Bloemen Waanders, Bo Zhu. Fluid Simulation on Compressible Flow Maps. *ACM Transaction on Graphics (SIGGRAPH 2025)*

Zhiqi Li, Candong Lin, **Duowen Chen**, Xinyi Zhou, Shiyong Xiong, Bo Zhu. Clebsch Gauge Fluid on Particle Flow Maps. *ACM Transaction on Graphics (SIGGRAPH 2025) (Honorable Mention)*

Sinan Wang, Junwei Zhou, Fan Feng, Zhiqi Li, Yuchen Sun, **Duowen Chen**, Greg Turk, Bo Zhu. Fluid Simulation on Vortex Particle Flow Maps. *ACM Transaction on Graphics (SIGGRAPH 2025)*

Duowen Chen, Zhiqi Li, Junwei Zhou, Fan Feng, Tao Du, Bo Zhu. Solid-Fluid Interaction on Particle Flow Map. *ACM Transaction on Graphics (SIGGRAPH Asia 2024)*

Zhiqi Li*, Ruicheng Wang* (joint first author), Junlin Li, **Duowen Chen**, Sinan, Wang, Bo Zhu. EDGE: Epsilon-Difference Gradient Evolution for Buffer-Free Flow Maps. *ACM Transaction on Graphics (SIGGRAPH 2025)*

Duowen Chen, Junwei Zhou, Bo Zhu. A Neural Particle Level Set Method for Dynamic Interface Tracking. *ACM Transaction on Graphics (presented at SIGGRAPH 2025)*

Zhiqi Li, **Duowen Chen**, Candong Lin, Jinyuan Liu, Bo Zhu. Particle laden fluid on flow maps. *ACM Transaction on Graphics (SIGGRAPH Asia 2024) (Best Paper Award)*

Sinan Wang, Yitong Deng, Molin Deng, Hong-Xing Yu, Junwei Zhou, **Duowen Chen**, Taku Komura, Jiajun Wu, Bo Zhu. An Eulerian Vortex Method on Flow Maps. *ACM Transaction on Graphics (SIGGRAPH Asia 2024)*

Junwei Zhou, **Duowen Chen**, Molin Deng, Yitong Deng, Yuchen Sun, Sinan Wang, Shiyong Xiong, Bo Zhu. Eulerian-Lagrangian Fluid Simulation on Particle Flow Maps. *ACM Transaction on Graphics (SIGGRAPH 2024)*

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

Benjamin Jones, Dalton Hildreth, **Duowen Chen**, Ilya Baran, Vova Kim, Adriana Schulz. AutoMate: A Dataset and Learning Approach for Automatic Mating of CAD Assemblies *ACM Transaction on Graphics (SIGGRAPH Asia 2021)*

SERVICE & TEACHING ACTIVITIES

Reviewer Service

- Siggraph/TOG (2025, 2026)
- Euro/Pacific Graphics/CGF (2024, 2025, 2026)
- TVCG (2025, 2026)
- NeurIPS (2026)

Teaching Activities

- Co-Instructor for CS 3451: Computer Graphics (2025 Fall) with Prof. Bo Zhu, Georgia Tech
- Head TA for CS 8803: Computer Graphics in AI Era (2025 Fall, 2026 Fall), Prof. Bo Zhu, Georgia Tech
- TA for CS 3451: Computer Graphics (2024 Spring, 2024 Fall), Prof. Bo Zhu, Georgia Tech
- TA for COSC 70: Foundation of Applied Computer Science (2022 Winter), Prof. Bo Zhu, Dartmouth College
- TA for COMS 4167: Computer Animation (2021 Fall), Prof. Changxi Zheng, Columbia University
- TA for CSE312: Probability Theory & Statistics (2019 Spring), Prof. Stefano Tessaro & Prof. Huijia Lin, University of Washington

PROJECT

Project form Computer Graphics / Animation Course / Rendering Course 2019 / 2020 / 2022
University of Washington (CSE457) / Columbia University (COMS4167) / Dartmouth College (COSC287)

- [Graphics Project](#): Synthesized all the topics covered in class, including shading, geometry, ray-tracing rendering using Monte-Carlo's method, splines, and animation
- [Animation Artworks](#): Implemented physics-based simulations starting with a mass-spring system with various stepping methods, object collisions, rigid body simulations, and deformable material simulations
- [Rendering Project](#): Implemented importance sampling for different light source for monte-carlo ray tracing, photon mapping, volumetric rendering, subsurface scattering.

Personal Project of Snow Removal

March. 2022

Personal Project

- [DesnowNet survey and CycleSnowGAN](#). Surveyed and implemented DesnowNet. Used CycleGAN as backbone combined with Pyramid pooling, ASPP and loss network to rebuild a snow removal network but in a GAN fashion.

Project form Deep Learning Course

Dec. 2021

Columbia University (COMS4995)

- [Survey on neural implicit method for reconstruction tasks](#). Merged implementations of Neural implicit representation of SDF, SIREN and NGLoD to the same framework and compared their performance for reconstructing 3D Mesh given point cloud data.