Zhen Chen

CONTACT INFORMATION

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RESEARCH INTERESTS

My current research focuses on robust real-time gaming mesh processing, covering tasks like remeshing, repairing, and simplification. I'm also intrigued by the physical aspects of thin shell models and their geometric properties. Finally, exploring the potential of enhancing outcomes through the fusion of mesh processing, physical simulations, and deep neural networks also excites me.

EDUCATION

The University of Texas at Austin   Austin, Texas

Ph.D. in Computer Science   2018 – Present

GPA: 4.0/4.0

Supervisor: Prof. Etienne Vouga

University of Science and Technology of China   Anhui, China

Bachelor in Mathematics   2014 – 2018

GPA: 4.06/4.3 (rank 1st among all students in the Mathematics Department)

Mentors: Prof. Ligang Liu

PUBLICATIONS

[1] **Zhen Chen**, Danny M. Kaufman, Mélina Skouras, Etienne Vouga. **Complex Wrinkle Field Evolution**. *ACM Transcations on Graphics, 2023 (SIGGRAPH 2023).*

[2] **Zhen Chen**, Zherong Pan, Kui Wu, Etienne Vouga, Xifeng Gao. **Robust Low-Poly Meshing for General 3D Models**. *ACM Transcations on Graphics, 2023 (SIGGRAPH 2023).*

[3] Yan Zheng, Lemeng Wu, Xingchao Liu, **Zhen Chen**, Qiang Liu, Qixing Huang. **Neural Volumetric Mesh Generator**. *NeurIPS 2022 Workshop SBM Poster, 2022.*

[4] **Zhen Chen**, Hsiao-yu Chen, Danny M. Kaufman, Mélina Skouras, Etienne Vouga. **Fine Wrinkling on Coarsely-Meshed Thin Shells**. *ACM Transcations on Graphics, 2021.*

[5] **Zhen Chen**, Daniele Panozzo, Jeremie Dumas. **Half-Space Power Diagrams and Discrete Surface Offsets**. *IEEE Transaction on Visualization and Computer Graphics, 2019.*

RESEARCH EXPERIENCE

Research Intern, LightSpeed Studios   Bellevue, US

Mentor: Xifeng Gao   Summer 2023

Project description: Develop a robust and efficient algorithm for approximating the convex decomposition of diverse 3D meshes. Our objective is to elevate collision detection performance in real-time gaming scenarios.

Research Intern, LightSpeed Studios   Bellevue, US

Mentor: Xifeng Gao   Summer 2022

Project description: Propose a remeshing algorithm designed to accurately capture sharp features, ensuring both the absence of intersections and water-tight integrity. Implement this methodology on real-world mesh data to showcase its practical applicability.

Research Assistant   UT Austin

Supervisor: Etienne Vouga   Fall 2022

Project description: Propose Neural Volumetric Mesh Generator (NVMG), a novel approach aimed at producing high-quality volumetric meshes for soft-body simulation.

Research Assistant   UT Austin

Supervisor: Etienne Vouga   Fall 2021 - Fall 2022

Project description: Propose a wrinkle representation to capture detailed wrinkles on a coarse underline mesh, and introduce the corresponding efficient algorithms for wrinkle editing, design, and interpolation.

Research Intern, Adobe   Remote in Austin, US

Mentor: Danny M. Kaufman   Summer 2021

Project description: Design a time integrator which achieves a trade-off between amplitude distortion (dissipation) and period distortion (dispersion). This is specifically designed for the incremental potential contact (IPC) model.

Student Intern, Geometric Computing Lab   NYU

Host: Daniele Panozzo   Summer 2017

Project description: Investigate an algorithm for the robust and efficient computation of offset surfaces for 3D meshes. This approach employs half-space power diagrams to achieve accurate results.

TEACHING EXPERIENCE	**Teaching assistant, Department of Computer Science**	UT Austin
	CS 303E: Elements of Computers and Programming	Fall 2018
	Teaching assistant, Department of Mathematics	USTC
	Complex Analysis Fall	Fall 2017
	Mathematical Analysis	Spring 2017

TALKS	**Complex Wrinkle Field Evolution**	
	SIGGRAPH	2023
	Robust Low-Poly Meshing for General 3D Models	
	SIGGRAPH	2023
	Fine Wrinkling on Coarsely-Meshed Thin Shells	
	SIGGRAPH	2022
	Half-Space Power Diagrams and Discrete Surface Offsets (with Jeremie Dumas)	
	Symposium on Geometry Processing (SGP)	2020

REVIEWS	Eurographics	2022
	Computer Graphics Forum	2022
	SIGGRAPH	2022, 2023
HONORS AND AWARDS	Baosteel ScholarShip(Top 2%)	2017
	National Scholarship (Top 1% nationwide)	2016
	Outstanding Freshman Scholarship (Top 1%)	2014
LANGUAGE AND SKILLS	**Programming**: C/C++, Python, Matlab	
	Software: Houdini, Adobe Premiere	
	Language: Chinese(native), English(fluent)	