Zhen Chen

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Research interests

Currently, My research majorly focuses on understanding the physical phenomenon of thin shell models, explore the corresponding geometric properties, and robust mesh processing. I am also interested in exploring the possibility to combine the cloth simulation with deep neutral networks.

Education

The University of Texas at Austin — Austin, Texas
Ph.D. in Computer Science — 2018 – Present
Supervisor: Prof. Etienne Vouga

University of Science and Technology of China — Anhui, China
Bachelor in Mathematics — 2014 – 2018
Mentors: Prof. Ligang Liu

Publications

[1] **Zhen Chen**, Danny M. Kaufman, Mélina Skouras, Etienne Vouga. **Complex Wrinkle 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.*

Talks

Half-Space Power Diagrams and Discrete Surface Offsets (with Jeremie Dumas)
Symposium on Geometry Processing (SGP) — 2020

Fine Wrinkling on Coarsely-Meshed Thin Shells
SIGGRAPH — 2022

Complex Wrinkle Field Evolution
SIGGRAPH — 2023

Robust Low-Poly Meshing for General 3D Models

SIGGRAPH 2023

Experience

Research Intern, Tencent AI Lab Bellevue, US
Mentor: Xifeng Gao Summer 2023
Project description: Develop a robust and efficient algorithm for approximate convex decomposition of general 3D meshes. We aim to enhance collision detection in real-time games.

Research Intern, Tencent AI Lab Bellevue, US
Mentor: Xifeng Gao Summer 2022
Project description: Propose a remeshing algorithm which captures sharp features with intersect-free and water-tight guarantee, and apply this technique to the real word mesh data.

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.

Research Assistant UT Austin
Supervisor: Etienne Vouga Fall 2021 - Spring 2022
Project description: Proposed an algorithm which interpolates the wrinkle patterns on two key frames. This can be applied for the artist to draw and design wrinkles on the cloth, and get a temporally continuous interpolation.

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 2017
Mathematical Analysis Spring 2017

Student intern, Geometric Computing Lab NYU
Host: Prof. Daniele Panozzo Summer 2017
Project description: Explored the algorithm to compute the offset surface of 3D meshes.

Reviews

Computer Graphics Forum, 2022
SIGGRAPH 2022 (sub-reviewer), 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)