

Zihan Zhao (赵子涵)

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EDUCATION

Shandong University

M.Eng in Computer Science | GPA: 89.39/100

Advisor: Prof. Shiqing Xin

Major Courses: Advanced Computer Graphics (95), Modeling and Processing of Digital Geometry (95), Advanced Human Computer Interaction Technology (98)

Shandong, China

Sep. 2022 – Jun. 2025

Shandong University

B.Eng in Computer Science | GPA: 86.81/100

Major Courses: Data Structures and Algorithms (93), Composition and Design of Computer (88), Operating System (89), Computer Networks (92), Probability and Statistics (92), Visualization Technology (98), Digital Image Processing (91)

Shandong, China

Sep. 2018 – Jun. 2022

PUBLICATIONS AND MANUSCRIPTS

- [P1] **Zihan Zhao**, Pengfei Wang, Minfeng Xu, Shuangmin Chen, Shiqing Xin, Changhe Tu, and Wenping Wang. OffsetCrust: Variable-Radius Offset Approximation with Power Diagrams. In *IEEE Transactions on Visualization and Computer Graphics (TVCG)*. (Under Review) [arxiv]
- [P2] Yunxiao Zhang, Zixiong Wang, **Zihan Zhao**, Rui Xu, Shuangmin Chen, Shiqing Xin, Wenping Wang, and Changhe Tu. 2023. A Hessian-Based Field Deformer for Real-Time Topology-Aware Shape Editing. In *SIGGRAPH Asia 2023 Conference Papers*. 1–11. [Link]

RESEARCH AND PROJECT EXPERIENCE

OffsetCrust: A Crust Method for Variable-Radius Offsets with Power Diagram [P1]

Advisor: Prof. Shiqing Xin | Shandong University

Jan. 2024 – Now

- **Description:** A precise explicit method for efficiently and accurately computing variable-radius offsets while avoiding tedious post-processing for self-intersections.
- **Key Methods:** Power Diagram, Blue-Noise Sampling, Sharp Feature Detection, 3D Vector Rotation, Computing Gradients and the Laplacian Matrix on Triangle Meshes, Solving the Discrete Biharmonic Equation, Homogeneous Coordinates for Optimization, and Parallel Computing (OpenMP, oneTBB).
- **My Contribution:** Implemented all code in C++; designed and conducted all experiments; authored the entire paper; and rendered all figures in 2D with SVG code and in 3D with Blender.

A Hessian-Based Field Deformer for Real-Time Topology-Aware Shape Editing [P2]

Advisor: Prof. Shiqing Xin | Shandong University

Mar. 2023 – Aug. 2023

- **Description:** A real-time shape editing method with support for genus change.
- **Key Methods:** Implicit B-Splines, Hessian Matrix, Ray Marching and Marching Cubes.
- **My Contribution:** Designed and conducted the user study (tasks, questionnaires, and creative demonstrations); authored the User Study section and created related figures and tables in the paper.

E-Coach (National 2nd Prize in the College Student Software Innovation Contest) [Frontend Code]

Advisor: Prof. Tian Gan | Shandong University

Nov. 2021 – May 2022

- **Description:** An exercise and health app that integrates multiple devices (phone and tablet) to guide users by analyzing their poses against a standard video and providing feedback on their movements.
- **Technology Stack**
 - * **Frontend UI** (Basic Interactions and Data Visualization): JavaScript, React Native, Android Studio, Kotlin
 - * **Frontend Func.** (Cross-Device Communication and Pose Detection): WebSockets, TensorFlow Lite, MoveNet
 - * **Backend** (Database and Public IP Address): Python, Django, MySQL, Huawei Cloud Server
- **My Contribution:** Contributed to the project idea and the selection of the technology stack based on the contest topic; designed the frontend software architecture and implemented the frontend UI code; wrote part of the documentation and created the project presentation video.

PROFESSIONAL EXPERIENCE

Discussion Seminars at IRC (<i>Interdisciplinary Research Center</i>) <i>Participated in discussions and presented recent research in computer graphics, e.g., extrinsic and intrinsic triangulations, Laplacian-based methods, 3D reconstruction, and generative models.</i>	Shandong University <i>July 2022 – Now</i>
Volunteer in International Conference on Geometric Modeling and Processing <i>Provided various conference services at the registration desk.</i>	Qingdao, China <i>Jun. 2024</i>
Teaching Assistant in Linear Algebra <i>Designed, assigned, and graded homework; assisted freshmen with questions.</i>	Shandong University <i>Sep. 2022 – Jan. 2023</i>
The 8th China Visualization and Visual Analytics Conference <i>Listened to reports and discussions on visualization and visual analytics.</i>	Wuhan, China <i>July 2021</i>

SELECTED HONORS AND AWARDS

Outstanding Postgraduate Student of Shandong University	<i>Sep. 2024</i>
Outstanding Graduates Award, Shandong University	<i>Jun. 2022</i>
National 2nd Prize in College Student Software Innovation Contest (<i>Prize: ¥25,000, Sponsored by OPPO</i>)	<i>May 2022</i>
National 1st Prize in Contemporary Undergraduate Mathematical Contest in Modeling	<i>Nov. 2019</i>
National 1st Prize in “Shenzhen Cup” Mathematical Modeling Challenge (<i>Prize: ¥15,000</i>)	<i>Aug. 2019</i>

SKILLS AND INTERESTS

Languages: Mandarin (*Native*), English (*CET-6: 534, TOEFL iBT: 88*)
Programming Languages: C/C++, Python, TypeScript, JavaScript, HTML/CSS, MATLAB
Frameworks: OpenMP, OpenGL, PyTorch, Django, NodeJS, React/React Native, Scss/Sass
Tools: Git, CMake, vcpkg, Visual Studio, VS Code, Sublime Text, PyCharm, Jupyter Notebook
Software: Blender, MeshLab, Figma, Adobe Illustrator (AI), Adobe After Effects (AE), Adobe Premiere (PR)
Interests: Piano, Musicals, Badminton (*University Team, Women's Singles*)