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SUMMARY

I am joining The University of Hong Kong as a Ph.D. student supervised by **Prof. Wenping Wang** and **Prof. Taku Komura**. Before that, I received my master's degree at the Interdisciplinary Research Center (IRC) of Shandong University, under the supervision of **Prof. Changhe Tu**, **Prof. Shiqing Xin** and **Prof. Mingyan Jiang**. My research areas are computer graphics, computational geometry, 3D vision, and geometric modeling.

EDUCATION

•The University of Hong Kong

Ph.D. in CS

2024 - now

Hong Kong, China

•Shandong University

M.Eng in EE

2021 - 2024

Shandong, China

•Shandong University

B.Eng in CS

2017 - 2021

Shandong, China

EXPERIENCE

•Microsoft Research Asia

Research intern in AIGC.

Feb 2024 - Jun 2024

Beijing, China

•Tencent

Research intern in Geometry Modeling.

Sep 2022 - Dec 2022

Shenzhen, China

•Alibaba

Algorithm Engineer intern for Digital Twins.

May 2020 - Sep 2020

Hangzhou, China

PUBLICATIONS

•ComboStoc: Combinatorial Stochasticity for Diffusion Generative Models

Rui Xu, Jiepeng Wang, Hao Pan, Yang Liu, Xin Tong, Shiqing Xin, Changhe Tu, Taku Komura, Wenping Wang

– Arxiv Preprint [Project Page] [Code]

•CWF: Consolidating Weak Features in High-quality Mesh Simplification

Rui Xu, Longdu Liu*, Ningna Wang, Shuangmin Chen, Shiqing Xin, Xiaohu Guo, Zichun Zhong, Taku Komura, Wenping Wang, Changhe Tu*

– ACM Transactions on Graphics (SIGGRAPH 2024) [Project Page] [Code]

•NeurCADRecon: Neural Representation for Reconstructing CAD Surfaces by Enforcing Zero Gaussian Curvature

Qiujie Dong, Rui Xu, Pengfei Wang, Shuangmin Chen, Shiqing Xin, Xiaohong Jia, Wenping Wang, Changhe Tu

– ACM Transactions on Graphics (SIGGRAPH 2024) [Project Page] [Code]

•Coverage Axis++: Efficient Inner Point Selection for 3D Shape Skeletonization

Zimeng Wang, Zhiyang Dou*, Rui Xu, Cheng Lin, Yuan Liu, Xiaoxiao Long, Shiqing Xin, Lingjie Liu, Taku Komura,*

Xiaoming Yuan, Wenping Wang

– Computer Graphics Forum (SGP 2024) [Project Page] [Code]

•A Task-driven Network for Mesh Classification and Semantic Part Segmentation

Qiujie Dong, Xiaoran Gong, Rui Xu, Zixiong Wang, Shuangmin Chen, Shiqing Xin, Changhe Tu

– Computer Aided Geometric Design (GMP 2024) [Project Page] [Code]

•Globally Consistent Normal Orientation for Point Clouds by Regularizing the Winding-Number Field

Rui Xu, Zhiyang Dou, Ningna Wang, Shiqing Xin, Shuangmin Chen, Mingyan Jiang, Xiaohu Guo, Wenping Wang, Changhe Tu

– ACM Transactions on Graphics (SIGGRAPH 2023) [Project Page] [Code]

– ACM SIGGRAPH 2023 Technical Papers Best Paper Award

•Implicit Neural Representation of Unoriented Point Clouds by Enforcing Singular Hessian

Zixiong Wang, Yunxiao Zhang, Rui Xu, Fan Zhang, Pengshuai Wang, Shuangmin Chen, Shiqing Xin, Wenping Wang, Changhe Tu

– ACM Transactions on Graphics (SIGGRAPH Asia 2023) [Project Page] [Code]

•**A Hessian-Based Field Deformer for Real-Time Topology-Aware Shape Editing**

Yunxiao Zhang, Zixiong Wang, Zihan Zhao, Rui Xu, Shuangmin Chen, Shiqing Xin, Wenping Wang, Changhe Tu

– SIGGRAPH Asia 2023 Conference

•**RFEPS: Reconstructing Feature-line Equipped Polygonal Surface**

Rui Xu, Zixiong Wang, Zhiyang Dou, Chen Zong, Shiqing Xin, Mingyan Jiang, Tao Ju, Changhe Tu

– ACM Transactions on Graphics (SIGGRAPH Asia 2022) [[Project Page](#)] [[Code](#)]

•**SurfaceVoronoi: Efficiently Computing Voronoi Diagrams over Mesh Surfaces with Arbitrary Distance Solvers**

Shiqing Xin[†], Pengfei Wang, Rui Xu, Dongming Yan, Shuangmin Chen, Wenping Wang, Caiming Zhang, Changhe Tu

– ACM Transactions on Graphics (SIGGRAPH Asia 2022) [[Code](#)]

•**QuickCSGModeling: Quick CSG Operations Based on Fusing Signed Distance Fields for VR Modeling**

Shuangmin Chen[†], Rui Xu, Jian Xu, Shiqing Xin, Changhe Tu, Chenglei Yang, Lin Lu

– ACM Transactions on Multimedia Computing Communications and Applications (ToMM 2023)

•**Coverage Axis: Inner Point Selection for 3D Shape Skeletonization**

Zhiyang Dou, Cheng Lin, Rui Xu, Lei Yang, Shiqing Xin, Taku Komura, Wenping Wang

– Computer Graphics Forum (Eurographics 2022) [[Project Page](#)] [[Code](#)]

•**EasyVRModeling: Easily Create 3D Models by an Immersive VR System**

Zhiying Fu, Rui Xu, Shiqing Xin, Shuangmin Chen, Changhe Tu, Chenglei Yang, Lin Lu

– ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (i3D 2022)

•**Top-Down Shape Abstraction Based on Greedy Pole Selection**

Zhiyang Dou, Shiqing Xin[†], Rui Xu, Jian Xu, Yuanfeng Zhou, Shuangmin Chen, Wenping Wang, Xiuyang Zhao, Changhe Tu

– IEEE Transactions on Visualization and Computer Graphics (TVCG 2020)

AWARDS

•2024 Microsoft “Stars of Tomorrow” Certificate

•2023 ACM SIGGRAPH Technical Papers Best Paper Award

•2022 CSIAM GDC Outstanding Young Scholars

•2023 Shandong University "Power of role models" Student of the Year

•2023 Shandong University Presidential Scholarship

•2023 National Scholarship

•2023 Interdisciplinary Research Center Highest Award

•2022 Hisense Scholarship

REVIEWE SERVICES

•ACM SIGGRAPH Asia

•Pacific Conference on Computer Graphics and Applications (Pacific Graphics)

•International Conference on Geometric Modeling and Processing (GMP)