Jing REN

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RESEARCH INTERESTS

Geometry processing, shape modeling, shape analysis, and computer graphics. In particular: non-rigid shape matching, urban reconstruction, geometric modeling and shape deformation, digital fabrication.

RESEARCH EXPERIENCE

ETH Zurich, Interactive Geometry Lab — *Zurich, Switzerland*
Senior Researcher; advised by Prof. Olga Sorkine-Hornung — *Jul 2023 - Now*

ETH Zurich, Interactive Geometry Lab — *Zurich, Switzerland*
Postdoctoral Researcher; advised by Prof. Olga Sorkine-Hornung — *Dec 2021 - Jun 2023*

Tencent, AI Lab (Digital Human) — *Shenzhen, China*
Researcher — *Jul 2021 - Dec 2021*

Alibaba, DAMO Academy, AI center (City Brain) — *Zhejiang, China*
Research Intern — *Jul 2020 - Jun 2021*

École Polytechnique, Laboratoire d'Informatique (LIX) — *Palaiseau, France*
Research Intern; advised by Prof. Maks Ovsjanikov — *Jun - Aug 2017, 2018, 2019*

EDUCATION

KAUST, Visual Computing Center (VCC) — *Jeddah, Saudi Arabia*
PhD in Computer Science; Supervised by Prof. ***Peter Wonka*** *and Prof.* ***Maks Ovsjanikov*** — *Aug 2015 - Jul 2021*
Thesis Shape Matching and Map Space Exploration via Functional Maps

University of Oxford, St Edmund Hall — *Oxford, United Kingdom*
Master of Science in Mathematical and Computational Finance with ***distinction*** — *Sep 2014 - Jul 2015*

Zhejiang University (ZJU), Chu Kochen Honors College — *Zhejiang, China*
*Bachelor of Science in Mathematics and Applied Mathematics; GPA: 3.88/4.0 (****top 5%****)* — *Aug 2010 - Jun 2014*

PUBLICATIONS

18 **Fabric Tessellation: Realizing Freeform Surfaces by Smocking**
Aviv Segall, Jing Ren, Amir Vaxman, Olga Sorkine-Hornung
ACM Transactions on Graphics (Proc. SIGGRAPH), 2024

17 **Computational Smocking through Fabric-Thread Interaction**
Ningfeng Zhou, Jing Ren, Olga Sorkine-Hornung
EUROGRAPHICS, 2024

16 **Digital 3D Smocking Design**
Jing Ren, Aviv Segall, Olga Sorkine-Hornung
ACM Transactions on Graphics, 2024 (presented in SIGGRAPH Asia 2023)

15 **Smooth Non-Rigid Shape Matching via Effective Dirichlet Energy Optimization**
Robin Magnet, Jing Ren, Olga Sorkine-Hornung, Maks Ovsjanikov
International Conference on 3D Vision (3DV), 2022

14 **Learning to Construct 3D Building Wireframes from 3D Line Clouds**
Yicheng Luo, Jing Ren, Xuefei Zhe, Di Kang, Yajing Xu, Peter Wonka, Linchao Bao
British Machine Vision Conference (BMVC), 2022

13 **Gaussian Blue Noise**
Abdalla G. M. Ahmed, Jing Ren, Peter Wonka
ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2022

12 **REALY: Rethinking the Evaluation of 3D Face Reconstruction**
Zenghao Chai*, Haoxian Zhang*, Jing Ren, Di Kang, Zhengzhuo Xu, Xuefei Zhe, Chun Yuan, Linchao Bao
European Conference on Computer Vision (ECCV), 2022 ∗equal contribution

11 **Intuitive and Efficient Roof Modeling for Reconstruction and Synthesis**
Jing Ren, Biao Zhang, Bojian Wu, Jianqiang Huang, Lubin Fan, Maks Ovsjanikov, Peter Wonka
ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2021

10 **Discrete Optimization for Shape Matching**
Jing Ren, Simone Melzi, Peter Wonka, Maks Ovsjanikov
Computer Graphics Forum (Proc. SGP), 2021

9 **Fast Sinkhorn Filters: Using Matrix Scaling for Non-Rigid Shape Correspondence with Functional Maps**
Gautam Pai, Jing Ren, Simone Melzi, Peter Wonka, Maks Ovsjanikov
Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021

8 **Geometric analysis of shape variability of lower jaws of prehistoric humans**
Jing Ren, Peter Wonka, Gowtham Harihara, Maks Ovsjanikov
L'Anthropologie, 2020

7 **MapTree: Recovering Multiple Solutions in the Space of Maps**
Jing Ren, Simone Melzi, Maks Ovsjanikov, Peter Wonka
ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2020

6 **MGCN: Descriptor Learning using Multiscale GCNs**
Yiqun Wang, Jing Ren, Dong-Ming Yan, Jianwei Guo, Xiaopeng Zhang, Peter Wonka
ACM Transactions on Graphics (Proc. SIGGRAPH), 2020

5 **Consistent ZoomOut: Efficient Spectral Map Synchronization**
Ruqi Huang, Jing Ren, Peter Wonka, Maks Ovsjanikov
Computer Graphics Forum (Proc. SGP), 2020

4 **ZoomOut: Spectral Upsampling for Efficient Shape Correspondence**
Simone Melzi*, Jing Ren*, Emanuele Rodolà, Abhishek Sharma, Peter Wonka, Maks Ovsjanikov
ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2019 ∗equal contribution

3 **Structured Regularization of Functional Map Computations**
Jing Ren, Mikhail Panine, Peter Wonka, Maks Ovsjanikov
Computer Graphics Forum (Proc. SGP), 2019

2 **Continuous and Orientation-preserving Correspondence via Functional Maps**
Jing Ren, Adrien Poulenard, Peter Wonka, Maks Ovsjanikov
ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2018

1 **Joint Graph Layouts for Visualizing Collections of Segmented Meshes**
Jing Ren, Jens Schneider, Maks Ovsjanikov, Peter Wonka
IEEE Transactions on Visualization and Computer Graphics (TVCG), 2017

ACADEMIC SERVICE

Program Committees

SIGGRAPH 2024, 2023
SGP 2024, 2023
Pacific Graphics 2024, 2022

Reviewer

SIGGRAPH 2024, 2023, 2022
SIGGRAPH Asia 2023
ACM TOG 2024, 2023, 2022, 2021
EUROGRAPHICS 2024, 2023
SGP 2024, 2023
ECCV 2024
SCF 2024
ICML 2023
ISPRS 2023
Computers & Graphics 2023
NeurIPS 2022
BMVC 2022
CGF 2022
IEEE TVCG 2021
IEEE CGA 2018

HONORS & AWARDS

Best Paper Award @ International Conference on 3D Vision (3DV) *2022*
Student Research Excellence Award @ KAUST *2020*
Best Paper Award honorable mention @ Symposium on Geometry Processing (SGP) *2019*
Graduate with distinction @ Oxford University *2015*
Graduate with honors in Program of Science & Engineering @ Zhejiang University *2014*
Scholarship for Outstanding Merits @ Zhejiang University *2011-2013*
Excellence Student @ Zhejiang University *2011*

TEACHING

Shape Modeling and Geometry Processing @ ETH Zurich *Guest Lecturer, Spring 2023*
Linear Algebra @ ETH Zurich *Head Teaching Assistant, Autumn 2022*
Shape Modeling and Geometry Processing @ ETH Zurich *Teaching Assistant, Spring 2022*

INVITED TALKS & OUTREACH EVENTS (SELECTION)

Seminar talk @ Universität Siegen *Siegen, Germany*
Topic: "Shape matching and map space exploration via functional maps", hosted by Prof. Michael Möller *Mar 26, 2024*

NACHTAKTIV "Science Catwalk" @ Museum Rietberg *Zurich, Switzerland*
Topic: "Digital 3D Smocking Design" [event] *Nov 2, 2023*

Seminar talk @ IST Austria *Klosterneuburg, Austria*
Topic: "Digital 3D Smocking Design", hosted by Prof. Chris Wojtan *Oct 24, 2023*

Seminar talk @ TU Wien *Vienna, Austria*
Topic: "Digital 3D Smocking Design", hosted by Prof. Michael Wimmer *Oct 20, 2023*

Seminar talk @ LORIA *Nancy, France*
Topic: "Digital 3D Smocking Design", hosted by Dr. Étienne Corman *Oct 4, 2023*

Headline speaker @ Toronto Geometry Colloquium *online*
Topic: "Non-rigid Shape Matching via Functional Maps" *Sep 17, 2021*

Seminar talk @ Central South University *online*
Topic: "Non-rigid Shape Matching via Functional Maps", hosted by Prof. Shengjun Liu *Jun 27, 2021*

Seminar talk @ TBSI, Tsinghua University *online*
Topic: "ZoomOut: Spectral Upsampling for Efficient Shape Correspondence", hosted by Prof. Ruqi Huang *May 31, 2021*

Guest lecture @ ShanghaiTech University *online*
Topic: "Discrete Laplace-Beltrami Operator", hosted by Prof. Chi-Han Peng *May 7, 2020*