

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
<i>Senior Researcher; advised by Prof. Olga Sorkine-Hornung</i> | Zurich, Switzerland
Jul 2023 - Now |
| ETH Zurich, Interactive Geometry Lab
<i>Postdoctoral Researcher; advised by Prof. Olga Sorkine-Hornung</i> | Zurich, Switzerland
Dec 2021 - Jun 2023 |
| Tencent, AI Lab (Digital Human)
<i>Researcher</i> | Shenzhen, China
Jul 2021 - Dec 2021 |
| Alibaba, DAMO Academy, AI center (City Brain)
<i>Research Intern</i> | Zhejiang, China
Jul 2020 - Jun 2021 |
| École Polytechnique, Laboratoire d'Informatique (LIX)
<i>Research Intern; advised by Prof. Maks Ovsjanikov</i> | Palaiseau, France
Jun - Aug 2017, 2018, 2019 |

PUBLICATIONS

- Chebyshev Parameterization for Woven Fabric Modeling**
Annika Öhri*, Aviv Segall*, [Jing Ren](#), Olga Sorkine-Hornung
ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2024 *equal contribution
- Fabric Tessellation: Realizing Freeform Surfaces by Smocking**
Aviv Segall, [Jing Ren](#), Amir Vaxman, Olga Sorkine-Hornung
ACM Transactions on Graphics (Proc. SIGGRAPH), 2024
- Computational Smocking through Fabric-Thread Interaction**
Ningfeng Zhou, [Jing Ren](#), Olga Sorkine-Hornung
Eurographics, 2024
- Digital 3D Smocking Design**
[Jing Ren](#), Aviv Segall, Olga Sorkine-Hornung
ACM Transactions on Graphics, 2024 (presented in SIGGRAPH Asia 2023)
- 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
- 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
- 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

EDUCATION

KAUST, Visual Computing Center (VCC)

PhD in Computer Science; Supervised by Prof. **Peter Wonka** and Prof. **Maks Ovsjanikov**
[Thesis](#) Shape Matching and Map Space Exploration via Functional Maps

Jeddah, Saudi Arabia
Aug 2015 - Jul 2021

University of Oxford, St Edmund Hall

Master of Science in Mathematical and Computational Finance with **distinction**

Oxford, United Kingdom
Sep 2014 - Jul 2015

Zhejiang University (ZJU), Chu Kochen Honors College

Bachelor of Science in Mathematics and Applied Mathematics; GPA: 3.88/4.0 (**top 5%**)

Zhejiang, China
Aug 2010 - Jun 2014

ACADEMIC SERVICE

Program Committees

Eurographics 2025
SIGGRAPH 2024, 2023
SGP 2024, 2023
Pacific Graphics 2024, 2022

Reviewer

SIGGRAPH 2024, 2023, 2022
SIGGRAPH Asia 2024, 2023
ACM TOG 2024, 2023, 2022, 2021
Eurographics 2024, 2023
SGP 2024, 2023
ECCV 2024
IEEE TVCG 2024, 2021

CGF 2024, 2022
SCF 2024
ICML 2023
ISPRS 2023
Computers & Graphics 2023
NeurIPS 2022
BMVC 2022
IEEE CGA 2018

HONORS & AWARDS

Best Paper Award honorable mention @ SIGGRAPH	2024
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

Linear Algebra @ ETH Zurich	<i>teaching assistant, Autumn 2024</i>
Computational Design for Additive Manufacturing (CDfAM) @ ETH Zurich	<i>summer school guest lecturer, Jul 2024</i>
Shape Modeling and Geometry Processing @ ETH Zurich	<i>guest lecturer, Spring 2023, Spring 2024</i>
Linear Algebra @ ETH Zurich	<i>head teaching assistant, Autumn 2022</i>
Shape Modeling and Geometry Processing @ ETH Zurich	<i>teaching assistant, Spring 2022</i>
2× Master Thesis, 2× Bachelor Thesis, 3× Semester Project @ ETH Zurich	<i>Thesis (co-)Advisor, 2022-Now</i>

INVITED TALKS & OUTREACH EVENTS (SELECTION)

Seminar talk @ Universität Siegen	<i>Siegen, Germany</i>
<i>Topic: "Shape matching and map space exploration via functional maps", hosted by Prof. Michael Möller</i>	<i>Mar 26, 2024</i>
NACHTAKTIV "Science Catwalk" @ Museum Rietberg	<i>Zurich, Switzerland</i>
<i>Topic: "Digital 3D Smocking Design" [event]</i>	<i>Nov 2, 2023</i>
Seminar talk @ IST Austria	<i>Klosterneuburg, Austria</i>
<i>Topic: "Digital 3D Smocking Design", hosted by Prof. Chris Wojtan</i>	<i>Oct 24, 2023</i>
Seminar talk @ TU Wien	<i>Vienna, Austria</i>
<i>Topic: "Digital 3D Smocking Design", hosted by Prof. Michael Wimmer</i>	<i>Oct 20, 2023</i>
Seminar talk @ LORIA	<i>Nancy, France</i>
<i>Topic: "Digital 3D Smocking Design", hosted by Dr. Étienne Corman</i>	<i>Oct 4, 2023</i>
Headline speaker @ Toronto Geometry Colloquium	<i>online</i>
<i>Topic: "Non-rigid Shape Matching via Functional Maps"</i>	<i>Sep 17, 2021</i>

Seminar talk @ Central South University

Topic: *“Non-rigid Shape Matching via Functional Maps”*, hosted by Prof. Shengjun Liu

online
Jun 27, 2021

Seminar talk @ TBSI, Tsinghua University

Topic: *“ZoomOut: Spectral Upsampling for Efficient Shape Correspondence”*, hosted by Prof. Ruqi Huang

online
May 31, 2021

Guest lecture @ ShanghaiTech University

Topic: *“Discrete Laplace-Beltrami Operator”*, hosted by Prof. Chi-Han Peng

online
May 7, 2020