

HAN ZHANG

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[han10th.github.io](https://github.com/han10th)

EDUCATION

City University of Hong Kong, Hong Kong

Department of Mathematics

Ongoing

Ph.D. in Mathematics

Chinese University of Hong Kong, Hong Kong

Department of Mathematics

July 2020

M.Phil. in Applied Mathematics

Sun Yat-Sen University, Guangzhou

School of Mathematics

June 2018

B.Sc. in Computational Science

RESEARCH INTEREST

Computational Fluid Mechanics: Fluid-Structure Interaction, Blood flow simulation

Computational Differential Geometry: Geometric Deep Learning, Deformable Model

Scientific Machine Learning: PINN method, Neural Networks

Image Science: Image Segmentation, Interactive Segmentation

JOURNAL PUBLICATIONS

1. Quasi-Conformal Convolution: A General Geometric Convolution Neural Network on Manifold Learning.
Han Zhang, Tsz Lok Ip, Lok Ming Lui
Submitted to *SIAM Journal of Image Science (SIIS)*.
[Geometric Image project]
2. Simulating Periodic Blood Flow in Elastic Vessels Using PINNs with Windkessel Boundary Conditions: Full and Reduced-Order Models.
Han Zhang, Lingfeng Li, Xue-Cheng Tai, Raymond Chan
Submitted to *Engineering Analysis with Boundary Elements (EABE)*.
[NSFSI project]
3. Full 3D Blood Flow Simulation in Curved Deformable Vessels Using Physics-Informed Neural Networks.
Han Zhang, Xue-Cheng Tai
Accepted by *Acta Mathematica Universitatis Comenianae (AMUC)*, 2024.
[NSFSI project]
4. QIS : Interactive Segmentation via Quasi-Conformal Mappings.
Han Zhang, Daoping Zhang, Lok Ming Lui
Accepted by *SIAM Journal of Image Science (SIIS)*, 2024.
[Geometric Image project]
5. A Meshless Solver for Blood Flow Simulations in Elastic Vessels Using Physics-Informed Neural Network.
Han Zhang, Raymond H. Chan, Xue-Cheng Tai
Accepted by *SIAM Journal of Scientific Computing (SISC)*, 2024.
[NSFSI project]
6. Deformation-Invariant Neural Network and Its Applications on Image Classification and Restoration.

Han Zhang, Qiguang Chen, Lok Ming Lui
Accepted by *Neural Network (NEU NET)*, 2024.
[Geometric Image project]

7. A Learning-based Framework for Topology-Preserving Segmentation using Quasiconformal Mappings.
Han Zhang, Lok Ming Lui
Accepted by *Neurocomputing (NEUCOMP)*, 2024.
[Geometric Image project]
8. Continuous Aerial Path Planning for 3D Urban Scene Reconstruction.
Han Zhang, Yucong Yao, Ke Xie, Chi-Wing Fu, Hao Zhang, Hui Huang.
Accepted by *ACM Transaction on Computer Graphics (ACM TOG, SIGGRAPH ASIA)*, 2021.
[Graphics]

PROCEEDING PUBLICATIONS

1. Nondeterministic Deformation analysis using Quasiconformal Geometry.
Han Zhang, Lok Ming Lui
Accepted by *IEEE International Conference on Image Processing (ICIP)*, 2022.
[Geometric Image project]

ACADEMIC ACHIEVEMENTS

Outstanding Academic Performance Award, 2024	
Excellent Student Scholarship of Sun Yat-Sen University, 2017	<i>First Class</i>
Excellent Thesis of Sun Yat-Sen University, 2018	<i>Outstanding</i>
China Undergraduate Mathematical Contest in Modeling, 2016	<i>Second Prize</i>
National High School Mathematics League, 2012	<i>Second Prize</i>

REVIEW

Computer Graphics Forum (EuroGraphics)

TECHNICAL STRENGTHS

Programming Languages	C++, PYTHON, MATLAB...
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