

# Hui Wang

Visual Computing Center (VCC), King Abdullah University of Science and Technology (KAUST), Jeddah, Saudi Arabia

☎ (+966) 0545654532 | ✉ hui.wang.1@kaust.edu.sa / hwangchn@outlook.com | 🌐 www.huiwang.me/

## Research Interest

Architectural geometry, geometry processing, computational design, CAD, CAGD, discrete differential geometry, etc.

## Experience / Education

### King Abdullah University of Science and Technology (KAUST)

Postdoc (<https://cemse.kaust.edu.sa/vcc/people/person/hui-wang>)

Principal Investigator (PI): Prof. Helmut Pottmann

Jeddah, Saudi Arabia

Mar. 2020 - Mar. 2023

### Dalian University of Technology (DUT)

PhD in School of Mathematical Sciences

Supervisor: Prof. Chungang Zhu

Dalian, China

Sep. 2015 - Mar. 2020

### TU Wien

Joint PhD in Institute of Discrete Mathematics and Geometry

Supervisor: Prof. Helmut Pottmann

Vienna, Austria

Sep. 2017 - Oct. 2019

### Dalian University of Technology (DUT)

MS in School of Mathematical Sciences

Supervisor: Prof. Zhonghua Hou

Dalian, China

Sep. 2013 - July 2015

### Jilin Normal University

BS in Mathematics and Applied Mathematics

Siping, China

Sep. 2009 - July 2013

## Publication

### Principal Symmetric Meshes

ACM Trans. Graphics, SIGGRAPH, 2020. (计算机图形学顶刊, CCF A 类)

2020

Hui Wang\*, Davide Pellis\*, Martin Kilian, Florian Rist, Helmut Pottmann, Christian Müller (\* 共同一作).

### Discrete Geodesic Parallel Coordinates

ACM Trans. Graphics, SIGGRAPH ASIA, 2019. (计算机图形学顶刊, CCF A 类)

2019

Hui Wang, Davide Pellis, Florian Rist, Helmut Pottmann, Christian Müller.

### Characteristic parameterizations of surfaces with a constant ratio of principal curvatures

Computer Aided Geometric Design, 2022. (计算机辅助设计顶刊, CCF B 类)

2022

Hui Wang, Helmut Pottmann.

### Designing asymptotic geodesic hybrid gridshells

submitted to Computer-Aided Design, 2022. (计算机辅助设计顶刊, CCF B 类)

2022

Hui Wang\*, Eike Schling\*, Sebastian Hoyer, Helmut Pottmann (\* 共同一作).

### The Design of Bézier Surface Through Quintic Bézier Asymptotic Quadrilateral

Journal of Computational Mathematics (JCM). (中科院 2 区)

2017

Hui Wang, Chungang Zhu, Caiyun Li.

### Construction of B-spline surface from Cubic B-spline Asymptotic Quadrilateral

Journal of Advanced Mechanical Design, Systems, and Manufacturing (JSME). (中科院 4 区)

2017

Hui Wang, Chungang Zhu, Caiyun Li.

### Construction of Rational Bézier Surface Interpolating Asymptotic Quadrilateral

Journal of Computer-Aided Design and Computer Graphics (计算机辅助设计与图形学学报). (CCF(中文) A 类)

2017

Hui Wang, Chungang Zhu, Caiyun Li.

- **$G^2$  Hermite Interpolation by Pythagorean Hodograph of Degree Six**  
Journal of Graphics(图学学报). (CCF(中文) C 类) 2016  
Hui Wang, Chungang Zhu, Caiyun Li.
- **Identification of Planar Sextic Pythagorean-Hodograph Curves**  
Journal of Mathematical Research with Applications(数学研究及应用). (英文, 核心) 2016  
Hui Wang, Chungang Zhu, Caiyun Li.
- **Using isometries for computational design and fabrication**  
ACM Trans. Graphics, SIGGRAPH, 2021. (计算机图形学顶刊, CCF A 类) 2021  
Caigui Jiang, Hui Wang, Victor Ceballos Inza, Felix Dellinger, Florian Rist, Johannes Wallner, Helmut Pottmann.
- **Architectural grid structures with planar continuous beams**  
submitted to Computer-Aided Design, 2022. (计算机辅助设计顶刊, CCF B 类) 2022  
Cheng Wang, Caigui Jiang, Hui Wang, Xavier Tellier, Helmut Pottmann.
- **Shape-morphing Mechanical Metamaterials**  
Computer-Aided Design, 2021. (计算机辅助设计顶刊, CCF B 类) 2021  
Caigui Jiang, Florian Rist, Hui Wang, Johannes Wallner, Helmut Pottmann.
- **Architectural Freeform Surfaces Designed for Cost-effective Paneling Through Mold Re-use**  
Advances in Architectural Geometry (AAG), 2020. 2020  
Davide Pellis, Martin Kilian, Hui Wang, Caigui Jiang, Christian Müller, Helmut Pottmann.
- **Design and Construction of Curved Support Structures with Repetitive Parameters**  
Advances in Architectural Geometry (AAG), 2018. 2018  
Eike Schling, Martin Kilian, Hui Wang, Jonas Schikore, Helmut Pottmann.
- **On helical surfaces with a constant ratio of principal curvatures**  
arXiv, 2022. 2022  
Yang Liu, Olimjoni Pirahmad, Hui Wang, Dominik L. Michels, Helmut Pottmann.
- **Curved Support Structures and Meshes with Spherical Vertex Stars**  
ACM Trans. Graphics, SIGGRAPH Poster, 2018. (计算机图形学顶刊 (展报), CCF A 类) 2018  
Martin Kilian, Hui Wang, Eike Schling, Jonas Schikore, Helmut Pottmann.

## Selected Talks

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- **Curves and Surfaces 2022** [Arcachon, France](#)  
Designing Asymptotic Geodesic Hybrid Gridshells Jun.20-24, 2022  
Presenter
- **SIGGRAPH ASIA 2019** [Brisbane, Australia](#)  
Discrete Geodesic Parallel Coordinates Nov.17-20, 2019  
Presenter
- **Computer Mathematics (CM) 2016** [Shenzhen, China](#)  
Construction of Bezier Surface by Bezier Asymptotic Quadrilateral Nov.11-13, 2016  
Presenter (in Chinese)
- **Asian Conference on Design and Digital Engineering 2016** [Jeju, Korea](#)  
Construction of B-spline Surface from Cubic B-spline Asymptotic Quadrilateral Oct.25-28, 2016  
Presenter
- **CSIAM Geometric Design and Computing (GDC) 2015** [Hangzhou, China](#)  
 $G^2$  Hermite Interpolation by Pythagorean Hodograph of Degree Six Aug.22-24, 2015  
Presenter (in Chinese)

## Skills

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- **Programming:** Python, Matlab, Maple, Rhino script
- **Software Tools:** Rhinoceros, Blender, Meshlab, GIMP. Rendering: V-ray, Keyshot
- **Language:** Chinese (native), English, German (beginner)

## Reference

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- **Prof. Helmut Pottmann:** VCC, KAUST; Applied geometry, TU Wien.
- **Ass.Prof.Christian Müller, Dr. Martin Kilian:** Applied geometry, TU Wien.
- **Prof. Chungang Zhu, Prof. Zhonghua Hou:** School of Mathematical Sciences, DUT.