

# Hao Xu

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**Home Page:** <https://haoxu99.github.io>

**Research Interests:** Computer Graphics, Computational Fabrication, AI for Manufacturing



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## Experience

**Shandong University, 2024/09-Now** | PhD candidate, School of Computer Science and Technology

- Advisor: Haisen Zhao

**Henan Polytechnic University, 2021/09-2024/06** | Master, School of Computer Science Technology

- Advisor: Wenpeng Xu

**Xinxiang University, 2017/09-2021/07** | Bachelor, School of 3D Printing

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## Publications

- **Chapper: Carvable Hull-and-Pack for Subtractive Manufacturing**

Zhenmin Zhang, Shuai Feng, **Hao Xu**, Lujiayang Fu, Lin Lu, Jianwei Guo, Haisen Zhao\*  
Conditionally accepted by SIGGRAPH Asia 2025 (journal track)

- **Carvable Packing of Revolved 3D Objects for Subtractive Manufacturing**

Chengdong Wei, Shuai Feng, **Hao Xu**, Qidong Zhang, Songyang Zhang, Zhongzhen Li, Changhe Tu, Haisen Zhao\*  
Graphical Models, 2025

- **Stress-Guided Lightweight Design and Optimization for 3D Printing Sacrificial Molds**

Wenpeng Xu, Ning Zhang, **Hao Xu\*** (Corresponding author), Liuchao Jin\*, Jingchao Jiang  
Materials & Design, 2025

- **INPR-Connector: Interlocking Negative Poisson's Ratio Connectors Design for Deployable Energy Absorption Structures**

Wenpeng Xu, Mengyu Zhang, **Hao Xu**, Menglin Yu, Liuchao Jin\*, Xiaoya Zhai\*, Jingchao Jiang  
Composites Part B: Engineering, 2025

- **Nature-inspired interlaced printing strategies for additive manufacturing highly improved mechanical properties**

Wenpeng Xu+, **Hao Xu+** (Joint first author), Xiaoya Zhai, Jingchao Jiang\*  
Additive Manufacturing, 2024

- **Stress-based continuous planar path planning for additive manufacturing**

Wenpeng Xu, **Hao Xu** (Student first author), Qiuge Li, Peng Zhang, Li Yang, Weiming Wang\*  
Advances in Engineering Software, 2024

- **Voxel-based variable width continuous spiral path planning for 3D printing**

Wenpeng Xu, Qiuge Li, **Hao Xu**, Xiaoya Zhai\*, Jingchao Jiang\*  
Journal of Manufacturing Processes, 2023

## Patents

- An in-situ material injection printing method and system for 3D printing  
CN202510853112.X
  - A 3D irregular object packaging method and system for subtractive manufacturing  
CN202510342804.8
  - A subtractive cutting method and system for the pre-machining of rotating bodies  
CN202510448035.X
  - A negative Poisson's ratio mortise and tenon joint structure, method, design method and its application  
CN202410280400.6
  - A design method for 3D printed lightweight molds  
CN202410467717.0
  - A stress-based continuous path planning method for 3D printing  
CN202211577183.4
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## Major Awards

- Excellent Master's Thesis of Henan Province (2024)
  - Outstanding Graduates (Master, 2024)
  - Second Prize of the 4th China Software Open Source Innovation Competition (2021)
  - Outstanding Graduates (Undergraduate, 2020)
  - Provincial Second Prize of the 13th Anniversary Elite League of the National 3D Competition (2021)
  - National Inspiration Scholarship (Undergraduate, 2020)
  - Group Third Prize at the Third 3D Printing and Modeling Competition in 2019 Belt & Road and BRICS Skills Development & Technology Innovation Competition (2019)
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## Open-source codes

- <https://github.com/haoxu99/Nature-inspired-interlaced-printing-strategies-for-additive-manufacturing>
  - <https://github.com/haoxu99/Stress-based-continuous-planar-path-planning-for-additive-manufacturing>
  - <https://github.com/haoxu99/Voxel-based-variable-width-continuous-spiral-path-planning-for-3D-printing>
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## Coding and Software skills

- C/C++: CGAL; Libigl; Eigen; Opencv; OpenGL; GLPK; Qt; ...
- Python: Pytorch; Numpy; PyMeshLab; Open 3d; ...
- Software: Meshlab; Autodesk 3DsMAX; Solid Works; UG-NX; Keyshot; Ultimaker Cura; Bambu Studio; Adobe Photoshop; ...