Jianzhe Gu

PH.D. STUDENT · HCI RESEARCHER

Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University,
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Research Interest: Computational Design, Tangible Interface, Digital Fabrication, HCI & Graphics

Education

Ph.D. in Human-Computer Interaction *(in progress)* — *Aug. 2018 - Present*

CARNEGIE MELLON UNIVERSITY, SCHOOL OF COMPUTER SCIENCE — *Pittsburgh, PA, USA*

- Advisor: Lining Yao

B.S. in Electrical and Computer Engineering — *Sept. 2014 - Apr. 2018*

SHANGHAI JIAO TONG UNIVERSITY, SCHOOL OF INFORMATION AND ELECTRICAL ENGINEERING — *Shanghai, China*

- Advisor: Xinbing Wang

Courses & Technical Skills

Programming	**Python**, **C/C++**, **Javascript**, Objective-C, Matlab, LaTeX
Frameworks	Pytorch, Tensorflow, OpenGL, Eigen, LibIGL
Tools	**Rhino/Grasshopper**, Unix/Linux, Adobe Illustrator, Blender
Courses	Deep Learning, Deep Reinforcement Learning, Convex Optimization, Computer Graphics, Discrete Differential Geometry, Optimal Control

Publications

PEER-REVIEWED PAPERS

[CHI 2022] **PneuMesh: Pneumatic-driven Truss-based Shape Changing System**
Jianzhe Gu, Yuyu Lin, Qiang Cui, Guanyun Wang, Lining Yao
In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems

[CHI 2022] **ElectriPop: Low-Cost Shape-Changing Displays with Electrostatically Inflated Mylar Sheets**
Cathy Fang, **Jianzhe Gu**, Lining Yao, Chris Harrison
In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems

[SCF 2020] **Inverse Design Tool for Asymmetrical Self-Rising Surfaces with Color Texture**
Jianzhe Gu, Vidya Narayanan, Guanyun Wang, Danli Luo, Harshika Jain, Kexin Lu, Fang Qin, Sijia Wang, James McCann, and Lining Yao
In Symposium on Computational Fabrication. ACM.

[UIST 2020] **E-seed: Shape-Changing Interfaces that Self Drill**
Danli Luo, **Jianzhe Gu**, Fang Qin, Guanyun Wang, and Lining Yao
In Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology

[UIST 2020] **SimuLearn: Fast and Accurate Simulator to Support Morphing Materials Design and Workflows**
Humphrey Yang, Kuanren Qian, Haolin Liu, Yuxuan Yu, **Jianzhe Gu**, Matthew McGehee, Yongjie Jessica Zhang, and Lining Yao
In Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology

[CAD 2020] **Material characterization and precise finite element analysis of fiber reinforced thermoplastic composites for 4D printing**
Yuxuan Yu, Haolin Liu, Kuanren Qian, Humphrey Yang, Matthew McGehee, **Jianzhe Gu**, Danli Luo, Lining Yao and Yongjie Jessica Zhang
Computer-Aided Design 2020

[CHI 2019] **Geodesy: Self-rising 2.5D Tiles by Printing along 2D Geodesic Closed Path**
Jianzhe Gu, David E. Breen, Jenny Hu, Lifeng Zhu, Ye Tao, Tyson Van de Zande, Guanyun Wang, Yongjie Jessica Zhang, and Lining Yao
In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems

[UIST 2018] **4DMesh: 4D Printing Morphing Non-Developable Mesh Surfaces**
Guanyun Wang, Humphrey Yang, Zeyu Yan, Nurcan Gecer Ulu, Ye Tao, **Jianzhe Gu**, Levent Burak Kara, and Lining Yao
In Proceedings of the 31st Annual ACM Symposium on User Interface Software and Technology

[CHI 2018] **Thermorph: Democratizing 4D printing of self-folding Materials and Interfaces**
Kwon An, Ye Tao, **Jianzhe Gu**, Tingyu Cheng, Anthony Chen, Xiaoxiao Zhang, Wei Zhao, Youngwook Do, Shigeo Takahashi, Hsiang-Yun Wu, Teng Zhang, and Lining Yao
In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems

[CHI 2018] **Printed Paper Actuator: A Low-cost Reversible Actuation and Sensing Method for Shape Changing Interfaces**
Guanyun Wang, Tingyu Cheng, Youngwook Do, Humphrey Yang, Ye Tao, **Jianzhe Gu**, Byoungkwon An, and Lining Yao
In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems

Demonstrations and Posters

[UIST '20 Adjunct] **FabricFit: Transforming Form-Fitting Fabrics**
Lingyun Sun, Ziqian Shao, Danli Luo, **Jianzhe Gu**, Ye Tao, Lining Yao, and Guanyun Wang
In Adjunct Publication of the 33rd Annual ACM Symposium on User Interface Software and Technology

[UIST '20 Adjunct] **WireTruss: A Fast-Modifiable Prototyping Method Through 3D Printing**
Lingyun Sun, Jiaji Li, Yu Chen, Yue Yang, **Jianzhe Gu**, Ye Tao, Lining Yao, and Guanyun Wang
In Adjunct Publication of the 33rd Annual ACM Symposium on User Interface Software and Technology

Talks

Thermorph: Democratizing 4D Printing of Self-folding Materials and Interfaces *2018*
ACM CHI 2019 Montreal, CA

Geodesy: Self-rising 2.5D Tiles by Printing along 2D Geodesic Closed Path *2019*
ACM CHI 2019 Glasgow, UK

Inverse Design Tool for Asymmetrical Self-Rising Surfaces with Color Texture *2020*
ACM SCF 2020 Boston, USA (virtual)

From Origami to Pasta: Material-driven Computational Self-Folding *2022*
INCOSE 2022 Detroit, USA (virtual)

Service

Reviewing
ACM CHI (2019-2022)
ACM UIST (2019-2022)
ACM SCF (2021)

Teaching
TA for 05-630(CMU) Programming Usable Interface (taught by Alexandra Ion) Fall 2021
TA for 05-610(CMU) User-Centered Research & Evaluation (taught by Aniket Kittur & Raelin Musuraca) Spring 2022
Guest Lecture for 05-899(CMU) Inclusive Tangible and Material Interfaces (taught by Lining Yao) Spring 2022