Cindy (Xinyi) Yang

Harvard University | Massachusetts Institute of Technology

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Research Interest:

Design and Fabrication, Robotics, Pop-up Nets, Shape-changing Systems, Origami Design, Human-computer Interaction

Education:

Harvard University 09/2021- 06/2023

Master of Design Studies (Technology/ Mediums Track)

Massachusetts Institute of Technology 09/2021- 06/2023

Mechanical Engineering/ EECS (Cross-registration)

Publications:

- **Computational Design and Fabrication of 3D Printed Textiles with Localized Anisotropic Elasticity** (The ACM Symposium on User Interface Software and Technology2023: Under Review).
  Authors: Yunyi Zhu, Xinyi Yang, Yoshihiro Kawahara, Stefanie Mueller, Koya Narumi
- **A Digital Fabrication Procedure to Rapidly Fold Structures via Pull-up Nets (**The ACM International Conference on Tangible, Embedded and Embodied Interaction 2023 work in progress)
  Authors: Xinyi Yang*, Lauren Niu*, Martin Nisser, Stefanie Mueller
  DOI: https://dl.acm.org/doi/10.1145/3569009.3573123
- **A Programmable Composite Material for Tangible Interaction** (The ACM International Conference on Tangible, Embedded and Embodied Interaction 2023 work in progress)
  Authors: Xinyi Yang, Martin Nisser, Stefanie Mueller
  DOI: https://dl.acm.org/doi/10.1145/3569009.3573120
- **Azimuth Calculation and Telecommunication between VR Headset and Smartphone for Nearby Interaction** (The ACM International Conference on Tangible, Embedded and Embodied Interaction 2023 work in progress)
  Authors: Xinyi Yang*, Susanna Chen*, Katarina Bulovic*, Junyi Zhu, Stefanie Mueller DOI: https://doi.org/10.1145/3569009.3573107

Research Experience:

- **Harvard Micro-robotics Laboratory** May 2022 – till now

  Institution: Harvard John A. Paulson School of Engineering and Applied Sciences

  - Working on the project CETI, which deploys devices to listen to whale communication in the deep ocean; Responsible for ***the adhesion and releasing system***;
  - Technical Skill: 3D modeling (Fusion360), rapid prototype (Soft material fabrication, 3D printing), testing and data analysis.
- **HCI Engineering Group** June 2022 – till now

  Institution: MIT Computer Science and Artificial Intelligence Laboratory (CSAIL)

  - Working on the research of ***transformable structures, including materials and folding patterns***;
  - Independent study: responsible for idea generation, designing the whole pipeline for fabrication, and creating the application;
  - Technical Skill: fabrication, electronic design, assembling, and simulation platform development.

Media:

Fashion in space: An Interactive 3D printed Garment in Zero-gravity Flight [Individual Work]

The garment is finished with 3D printed material. By using computational toolkits, the garment is divided into 221 pieces, and all the pieces can be combined without using any glue or adhesive tape. [Link]

Technical Skills:

Design: Fusion360, AutoCAD, Rhino, Grasshopper, Adobe, Unity, Revit

Front-end: HTML, p5.js, swift

Back-end: Python, C, C++(Beginner), C#

Physical: Fabrication and Manufacturing, Arduino (assembling and programming), PCB board (design and assembling)

Analysis: MATLAB (data analysis and visualization); GIS (spatial data analysis and visualization)