# HU, Guofeng

## Education

*Ph.D in Mechanical and Automation Engineering (Advisor: **Prof. Wei-Hsin Liao**)*

The Chinese University of Hong Kong July. 2015-Aug. 2021

*B. Eng in Mechanical Engineering and Automation (Advisor: **Prof. Yong Hu**)*

Jilin University Aug. 2011-Jun. 2015

## Research experience

*A novel and advanced sectioning system (microtome) for fresh soft tissue* Aug. 2021-present

- Developed microtome with high working frequency (up to 360Hz) based on vibration cancellation by compliant mechanism.
- Developed an active vibration control platform and power amplifier module for microtome.
- Incorporating microtome into a single-photon microscope system for high resolution and fast 3D imaging of fresh tissue samples (on going).

*Adaptive Poisson's ratio structures* July. 2019-Aug. 2021

- Designed and fabricated a structure with adaptive Poisson's ratio by direct FDM 4D printing.
- The Poisson's ratio of structure could adapt from positive to negative.
- Designed structure could undergo large deformation.

*Direct 4D printing with shape memory polymer by fused deposition modelling (FDM)*

July. 2015-Aug. 2019

- Developed a direct FDM 4D printing method with shape memory polymer.
- Figured out the mechanism on inducing pre-strain during FDM printing process.
- Developed programming method for complex shape transformation from simple and flat structures (conical and doubly curved constructional structures, helical and twisting structures, double-helix DNA structure, functional gripper obtained by shape transformation of 4D printing).
- Developed 3D macroscopic constitutive model for shape memory polymer.

## Work experience

*Postdoctoral Fellow (Advisor: **Prof. Shih-Chi Chen**)*

The Chinese University of Hong Kong Aug. 2021-2022

*Teaching assistant (@The Chinese University of Hong Kong)*

MAEG5030 Geometric Computing for Design and Manufacturing Fall. 2018

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| MAEG3020 Manufacturing Technology | Spring. 2018, 2017, 2016 |
| MAEG2010 Computer-Aided Drafting | Fall. 2017, 2016, 2015 |

## Publications

**Hu, G. F.**, Damanpack, A. R., Bodaghi, M., & Liao, W. H. "Increasing dimension of structures by 4D printing shape memory polymers via fused deposition modeling," *Smart Materials and Structures*, 26(12), 125023, 2017 **(IF 3.585) Citation:58**

Bodaghi, M., Damanpack, A. R., **Hu, G. F.**, & Liao, W. H. "Large deformations of soft metamaterials fabricated by 3D printing," *Materials & Design*, 131, 81-91, 2017 **(IF 7.991) Citation:64**

**Hu, G. F.**, Damanpack, A. R., Bodaghi, M., & Liao, W. H. "Shape Adaptive Structures by 4D Printing," *In Smart Materials, Adaptive Structures and Intelligent Systems* (Vol. 58257, p. V001T08A003). *American Society of Mechanical Engineers* (2017, September).