

Keyang Yang

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EDUCATION

School of Aerospace Engineering, Tsinghua University, Beijing, China Aug. 2019 – Jul. 2023

- Bachelor of Engineering in Engineering Mechanics (Tsien Excellence in Engineering Program)
- **GPA:** 3.97/4.00 **Ranking:** 1/140
- Core Courses: Foundation of Solid Mechanics (A+), Methods of Mathematical Physics (A+), Fluid Dynamics (A), Finite Element Method (A), Probability and Statistics (A), Thermodynamics and Statistical Physics (A), Fundamentals of Dynamics and Control (A-), Foundations of Scientific and Engineering Computing (A-)

RESEARCH EXPERIENCE

Mechanical Engineering Department, Stanford University

Advisor: Renee Zhao, Assistant Professor of Mechanical Engineering at Stanford

Project: Simulation of Ring Origami Structures with Larger Packing Ratios Jun. 2022 – Present

- Created ABAQUS models to simulate the packing process of ring origami structures with different shapes
- Developed Python programs for parametric modeling, data export and post-processing
- Obtained the relationship between the loading curves and the geometric parameters, loading positions, cross-sectional shapes, etc. during the folding process

Institute of Biomechanics, Tsinghua University

Advisor: Bo Li, Associate Professor at the School of Aerospace Engineering

Project: Instability Analysis of Active Soft Material Spherical Shell Jul. 2021 – Jun. 2022

- Applied the theory of active soft matter to the instability morphology problems in biological systems
- Set up a model of active soft spherical shell, derived the governing equations of shell surface instability using different active material theories and numerically solved the instability morphology with COMSOL
- Explained the relationship between morphogenesis and defects during the regeneration of hydroids

Center for Nano and Micro Mechanics, Tsinghua University

Advisor: Quanshui Zheng, Chair Professor at the School of Aerospace Engineering

Ming Ma, Associate Professor at the Department of Mechanical Engineering

Project: Realization of Macro-scale Superlubricity Based on Micro-contact Oct. 2020 – Jun. 2021

- Constructed tens of superlubric systems at the graphite/2D materials (graphite, WS₂, SiO₂) interface
- Assembled several micro-scale superlubric contact to expand the area of the superlubric system
- Developed a new method to connect micro graphite flakes with PDMS and determined the optimal experimental parameters in preparation of PDMS film
- Calculated the deformation of PDMS film under a given load with COMSOL

SELECTED HONORS AND AWARDS

National Scholarship, highest scholarship for topmost 0.5% undergrads in China	2022
Grand Prize , the 3rd International Engineering Mechanics Contest (Asian Region)	2021
First Prize, the 13th China Mechanics Competition in Honour of Zhou Peiyuan	2021
Scholarship for Comprehensive Excellence (for top 10% comprehensively excellent undergrads in Tsinghua)	2021
Scholarship for Technological Innovation (for top 20% undergrads in School of Aerospace Engineering)	2021
The "December 9th" Scholarship (for top 1% comprehensively excellent sophomores in Tsinghua)	2020

LEADERSHIP AND ACTIVITIES

Monitor of Class	Sep. 2019 – Jun. 2020
Chairman of Class Student Academic Forum	Aug. 2020 – Aug. 2021

SKILLS AND RESEARCH INTERESTS

Skills: MATLAB, C, Python, ABAQUS, COMSOL, Solidworks, AutoCAD, Adobe Photoshop, Microsoft Office, L^AT_EX
Research Interests: Solid Mechanics, Computational Mechanics, Soft Matter Mechanics, Deployable Structures