Keyang Yang

Tsinghua University, Beijing, 100084, P.R. China
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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, Assitant 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, WS_2, SiO_2) 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
- Simulated 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, LaTeX
Research Interests: Solid Mechanics, Computational Mechanics, Soft Matter Mechanics, Deployable Structures