

# Zechen XIONG

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## EDUCATION

- 2018.9-Pres. **Columbia University, GSAS** | New York, NY  
GPA: 4.11/4.3  
Ph.D., Hod Lipson's Creative Machines Lab, focusing on soft robotics
- 2015.9-2018.7 **Tsinghua University, School of Civil Eng.** | Beijing, China  
Ranking: 1/82 GPA: 3.70/4.0  
Master in Civil Engineering  
Thesis: "Analysis for Heat Transfer and Multi-field Coupling of Energy Geosttructures."
- 2012.9-2015.7 **Tsinghua University, School of Economics and Management** | Beijing, China  
Second Bachelor's Degree in Economics
- 2010.9-2015.7 **Tsinghua University, School of Civil Eng.** | Beijing, China  
Bachelor's Degree in Civil Engineering

## RESEARCH

- 2018.9-Pres **Zechen Xiong**, Hang Xiao, and Xi Chen. "Fractal-Inspired Soft Deployable Structure: A Theoretical Study." *Soft Matter* 17, no. 18 (May 12, 2021): 4834–41
- Tianwei Jin, Yirui Ma, **Zechen Xiong**, Xiaoyu Fan, Yu Luo, Zeyu Hui, Xi Chen, and **Yuan** Yang. "Bioinspired, Tree-Root-Like Interfacial Designs for Structural Batteries with Enhanced Mechanical Properties." *Advanced Energy Materials* 11, no. 25 (2021): 2100997
- Zechen Xiong**, Yufeng Su, and Hod Lipson. "Fast Untethered Soft Robotic Crawler with Elastic Instability." arXiv, October 5, 2022 (ICRA 2023, under review)
- Zechen Xiong**, Liqi Chen, Wenxiong Hao, Yufeng Su, Hod Lipson. "In-Plane **Prestressed** Hair Clip Mechanism for the Fastest Untethered Compliant Fish Robot." arXiv, July 17, 2022 (Science, under review)
- 2017-2018 Published three papers in CSCD journals as a Master's at the dept. of Civil Eng., Tsinghua University

## TEACHING

- 2022.7-8 **Columbia University Academic Success Program** | New York, NY  
*Physics Instructor*
- ♦ Designed syllabus, contents for 7 lectures, multiple quizzes, and 2 exams for 21 students independently
  - ♦ Graded students' performance and gave them one-on-one instructions and general evaluations
- 2018.9-2021.9 **Columbia University Environmental Engineering Dept.** | New York, NY

*Teaching Assistant*

**EAEE3200 – Hydraulics**

- ♦ Managed full class of undergraduates (~15) for 3 semesters
- ♦ Offered 4 recitations/lectures, 8 assignments, gradings, 2 exams, and 36 office hours every semester in the professor's absence

**EAEE4257 – Environmental Data Analysis & Modeling**

- ♦ Assisted students with homework and lectures
- ♦ Created grading rubrics, held office hours, and gave grades

**EAEE4001 – Industry Ecology-Earth Resources**

- ♦ Helped over 10 groups with software, assignments, and final projects
- ♦ Graded the performance of each group based on homework and projects

2012-2015.7 **Tsinghua University Red Cross | Beijing, China**

*Volunteer Instructor*

- ♦ Introduced Physics to elementary school students
- ♦ Organized extracurricular activities like singing and team working

**WORKING**

2021.10-Pres **Columbia University Creative Machines Lab | New York, NY**

*Ph.D. Candidate, Soft Robotics*

- ♦ Designed and develop soft robotic fish, crawlers, grippers, and ornithopters using a novel bi-stable hair clip mechanism
- ♦ Led a research group of ~5 people on metamaterials, smart structures, and soft robotics
- ♦ Presented on robotics and the prospect of novel soft robotic mechanisms

2018.9-2021.9 **Columbia University Earth Engineering Center | New York, NY**

*Ph.D. Candidate, Fractal Mechanisms*

- ♦ Conducted theoretic derivation for beam-like, bistable, and prestressed mechanisms
- ♦ Designed and simulate fractal-inspired mechanisms for larger deformability

2015.6-9 **Dong Fureng Economic and Social Development Institute | Beijing, China**

*Researcher, advisor: Sheng Hua*

- ♦ Helped organize Governmental Land Reform Forums, Beijing
- ♦ Analyzed and present on social problems like corruption problem and real estate price

**SKILLS**

*Design*

- Solidworks
- Adobe Creative Suite
- Auto CAD
- SketchUp
- Revit
- SAP2000

*Engineer*

- Laser cutting
- Water jetting
- 3D printing
- COMSOL Multiphysics
- ANSYS
- ABAQUS

*Language*

- English
- Mandarin
- Matlab
- C
- Arduino
- Python