JiaHao Li

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Education

2022 – 2027 **PHD Solid Mechanics (Recommended), GPA:3.89/4.3**
University of Science and Technology of China, Hefei City, Anhui Province, China

2018 – 2022 **B.S. Mechanical Engineering, GPA:3.76/4.3**
Xi'an Jiaotong University, Xi'an, Shaanxi Province, China

Skills

Languages	English (IELTS 7.0), Mandarin Chinese.
Coding	Python, C++, Matlab, Mathematica, Maple, Shell, LaTeX,
Material Computation	LAMMPS, VASP, Gaussian, OVITO, VMD, VESTA, XTB, COMSOL, ABAQUS, DER (discrete elastic rod)
Interests	Piano, Guitar

Miscellaneous Experience

Awards and Achievements

2025 **National Scholarship**, University of Science and Technology of China.

2024 **National Scholarship**, University of Science and Technology of China.

2022 **Outstanding graduate** , Xi'an Jiaotong University.

2020 **Provincial first prize in the Chinese Mathematics Competitions** , Xi'an Jiaotong University.

2019 **National Scholarship**, Xi'an Jiaotong University.

2017 **First Prize in the Provincial Division of the National Physics Competition for Middle School Students**, Xi'an, Shaanxi Province.

Research Publications

Journal Articles

1. J. He et al., "Switchable adhesion of phase-transition eutectogels with integrated machine learning-enhanced intelligent adhesion sensing," *Nature Communications*, 2026.
2. J. Li, H. Wu, and W. Huang, "Numerical investigation of growth-induced buckling of soft filaments in confined spaces," *International Journal of Non-Linear Mechanics*, p. 105 363, 2026.
3. J. Li et al., "Inverse design of a magneto-elastica for shape-morphing," *arXiv preprint arXiv:2604.12938*, 2026.
4. X. Wu et al., "Rejuvenation of mechanical fatigue resistance in 2d ferroelectric cuinp2s6 by reversing ionic motion," *Small*, vol. 22, no. 30, e73338, 2026.

5 X. Wu et al., "Thickness-driven phase transition and electromechanical optimization in 2d ferroelectric cuinp2s6," *ACS Materials Letters*, vol. 8, no. 4, pp. 1085–1093, 2026.

6 Z. Zhang et al., "Chain-rigidity-governed mechanical stiffening of polymer ultrathin films," *Macromolecules*, 2026.

7 C. Zhu et al., "Synergistic prestress and interfacial interactions reinforce layered brushite/sodium alginate composites," *Advanced Functional Materials*, vol. 36, no. 9, e13381, 2026.

8 J. Dai et al., "Strengthening transition metal–oxygen interaction in layered oxide cathodes for stable sodium-ion batteries," *ACS nano*, vol. 19, no. 11, pp. 11 197–11 209, 2025.

9 J. Dai et al., "Unraveling the degradation mechanism of sodium iron hexacyanoferrate cathodes in sodium ion batteries," *Energy & Environmental Science*, vol. 18, no. 19, pp. 8791–8802, 2025.

10 J. Gu et al., "Biomimetic strong and tough mxene fibers with synergy between micropores and dual interfaces," *Nature Communications*, vol. 16, no. 1, p. 9645, 2025.

11 Y. Hou et al., "Artificial kink defects enable high-efficiency degradation of nanocellulose via mechanochemical activation," *Matter*, vol. 8, no. 9, 2025.

12 W. Huang et al., "A tutorial on simulating nonlinear behaviors of flexible structures with the discrete differential geometry (ddg) method," *Applied Mechanics Reviews*, pp. 1–88, 2025.

13 J. Li, X. Sun, Z. He, Y. Hou, H. Wu, and Y. Zhu, "Biomimetic turing machine: A multiscale theoretical framework for the inverse design of target space curves," *Journal of the Mechanics and Physics of Solids*, vol. 196, p. 105 999, 2025.

14 J. Li et al., "Inverse elastica: A theoretical framework for inverse design of morphing slender structures," *Journal of the Mechanics and Physics of Solids*, p. 106 488, 2025.

15 J. Li et al., "Harnessing discrete differential geometry: A virtual playground for the bilayer soft robots," *Advanced Intelligent Systems*, vol. 7, no. 9, p. 2 500 141, 2025.

16 J. Qin et al., "A bio-inspired magnetic soft robotic fish for efficient solar-energy driven water purification," *Small Methods*, vol. 9, no. 3, p. 2 400 880, 2025.

17 J. Qin et al., "Magnetic oxygen-generating robots via a self-healing hydrogel-based modular assembly strategy," *Science China Materials*, pp. 1–12, 2025.

18 R. Song, Z. He, J. Li, Y. Hou, H. Wu, and Y. Zhu, "Hygromechanical deformation of wood cell walls regulated by the microfibril angle," *Journal of Materials Chemistry A*, vol. 13, no. 3, pp. 1973–1982, 2025.

19 D. Tong, Z. Hao, J. Li, and W. Huang, "Inverse design of planar clamped-free elastic rods from noisy data," *International Journal for Numerical Methods in Engineering*, vol. 126, no. 5, e70018, 2025.

20 D. Tong et al., "Discrete differential geometry for simulating nonlinear behaviors of flexible systems: A survey," *Extreme Mechanics Letters*, p. 102 430, 2025.

21 H. Wan, Y. Hou, J. Li, R. Song, Y. Zhu, and H. Wu, "A coarse-grained model for nanocellulose with hydration interfaces revealing the anomalous mechanical enhancement," *Extreme Mechanics Letters*, vol. 78, p. 102 361, 2025.

22 G. Wang et al., "Rejuvenation of mechanical fatigue resistance in two-dimensional ferroelectric cuinp2s6 by reversing ionic motion," 2025.

23 Y. Wang et al., "Mechanically robust 2d magnetic semiconductor: Anisotropic elasticity and fatigue resistance in crsbr," *Nano Letters*, vol. 25, no. 45, pp. 16 278–16 286, 2025.

24 S. Yuan et al., "Sword and board in one: A bioinspired nanocomposite membrane for guided bone regeneration," *Advanced Materials*, vol. 37, no. 37, p. 2 504 577, 2025.

25 S.-M. Chen et al., "Hierarchical and reconfigurable interfibrous interface of bioinspired bouligand structure enabled by moderate orderliness," *Science Advances*, vol. 10, no. 14, eadl1884, 2024.

26 B. Li et al., "Anisotropic fracture of two-dimensional ta2nise5," *Nano Letters*, vol. 24, no. 21, pp. 6344–6352, 2024.

27 J. Li, Y. Hou, Z. He, H. Wu, and Y. Zhu, "Strain engineering of ion-coordinated nanochannels in nanocellulose," *Nano Letters*, vol. 24, no. 21, pp. 6262–6268, 2024.

28 J. Qin et al., "Biomimetic solar photocatalytic reactor for selective oxidation of aromatic alcohols with enhanced solar-energy utilization," *Advanced Functional Materials*, vol. 34, no. 9, p. 2 311 214, 2024.

29 J.-H. Xiao et al., "Bioinspired polysaccharide-based nanocomposite membranes with robust wet mechanical properties for guided bone regeneration," *National Science Review*, vol. 11, no. 3, nwad333, 2024.

30 Y. Sun et al., "3d printing of thermosets with diverse rheological and functional applicabilities," *Nature communications*, vol. 14, no. 1, p. 245, 2023.