

CHENZHUO LI

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EDUCATION

<i>Apr 2021 - Present</i>	Doctoral Student in Mechanics <i>École Polytechnique Fédérale de Lausanne</i>	<i>Lausanne, Switzerland</i>
	<ul style="list-style-type: none"> • Thesis title: Solvent-coupled deformation in polymers near interfaces • Advisor: Prof. John Kolinski [website] 	
<i>Sep 2014 - Jun 2018</i>	B.S. in Aeronautical Propulsion Engineering <i>Beihang University</i>	<i>Beijing, China</i>
	<ul style="list-style-type: none"> • GPA: 3.7/4.0 	
<i>Sep 2017 – Feb 2018</i>	Undergraduate International Exchange Program <i>Polytechnic University of Milan</i>	<i>Milan, Italy</i>

RESEARCH EXPERIENCE

<i>Apr 2021 - Present</i>	Ph.D. candidate in Mechanics <i>École Polytechnique Fédérale de Lausanne</i>	<i>Lausanne, Switzerland</i>
	<ul style="list-style-type: none"> • Soft materials, 3D microscopy, particle tracking, fracture mechanics, poromechanics • Advisor: Prof. John Kolinski [website] 	
<i>Oct 2018 – Jan 2021</i>	Research Assistant <i>Beihang University</i>	<i>Beijing, China</i>
	<ul style="list-style-type: none"> • 2D & 3D digital image correlation • Principle Investigator: Prof. Bing Pan [website] 	
<i>Jun 2018 – Sep 2018</i>	Experiment Assistant <i>Center of Space Exploration (Chongqing University)</i>	<i>Beijing, China</i>
<i>Sep 2017 – Jun 2018</i>	Undergraduate researcher <i>Beihang University</i>	<i>Beijing, China</i>
	<ul style="list-style-type: none"> • Finite element analysis on porous materials • Principle Investigator: Prof. Zaoyang Guo [website] 	
<i>May 2015 – Oct 2016</i>	Team Leader and APP developer <i>Beihang University</i>	<i>Beijing, China</i>

PUBLICATIONS

* Equal contribution, † Corresponding author

15. C. Li, T. Beyeler, M. A. Chalhoub, J. Kolinski†, “Following the thread of solvent migration in silicone elastomers: from local volumetric swelling to global forces”, *Proceedings of the National Academy of Sciences*, under review (2025)
14. T. Yuan, C. Li, A. Georgopoulou, J. Kolinski, E. Amstad†, “3D-Printable DNGH-Based Pressure Sensor with Tunable Mechanical and Electrical Properties”, *Advanced Materials Technologies*, under review (2025)
13. T. Yuan, C. Li, J. Kolinski, E. Amstad†, “Electrostatically reinforced double network granular hydrogels”, *Advanced Science*, 12, 2412566 (2025) [link]
12. C. Li, D. Zubko, D. Delespaul, J. Kolinski†, “3D characterization of kinematic fields and poroelastic swelling near the tip of a propagating crack in a hydrogel”, *International Journal of Fracture*, online, 1–15 (2024) [link]

11. X. Wei, C. Li, C. McCarthy, J. Kolinski[†], “Complexity of crack front geometry enhances toughness of brittle solids”, *Nature Physics*, 20, 1–6 (2024) [link]
10. T. Benkley^{*}, C. Li^{*}, J. Kolinski[†], “Estimation of the Deformation Gradient Tensor by Particle Tracking Near a Free Boundary with Quantified Error”, *Experimental Mechanics*, 63(7), 1255–1270 (2023) [link]
9. C. Li^{*}, X. Wei^{*}, M. Wang, M. Adda-Bedia, J. Kolinski[†], “Crack tip kinematics reveal the process zone structure in brittle hydrogel fracture”, *Journal of the Mechanics and Physics of Solids*, 178, 105330 (2023) [link]
8. K. Zhu^{*}, C. Li^{*}, B. Pan[†], “Rapid and Repeatable Fluorescent Speckle Pattern Fabrication Using a Handheld Inkjet Printer”, *Experimental Mechanics*, 62(4), 627–637 (2022) [link]
7. X. Zhang^{*}, C. Li^{*}, L. Yu, B. Pan[†], “Heatwave distortion correction using an improved reference sample compensation method and multispectral digital image correlation”, *Applied Optics*, 60(13), 3716–3723 (2021) [link]
6. B. Dong, C. Li, B. Pan[†], “Fluorescent 2D Digital Image Correlation With Built-in Coaxial Illumination for Deformation Measurement in Space-constrained Scenarios”, *Experimental Mechanics*, 61, 653–661 (2021) [link]
5. B. Fu^{*}, C. Li^{*}, B. Dong[†], P. Ou[†], “Enhanced Digital Gradient Sensing Using Backlight Digital Speckle Target”, *Sensors*, 20(22), 6557 (2020) [link]
4. C. Li, H. Luo, B. Pan[†], “High-throughput measurement of coefficient of thermal expansion using a high-resolution digital single-lens reflex camera and digital image correlation”, *Review of Scientific Instruments*, 91(10), 105106 (2020) [link]
3. B. Dong^{*}, C. Li^{*}, B. Pan[†], “Fluorescent digital image correlation applied for macroscale deformation measurement”, *Applied Physics Letters*, 117(4), 044101 (2020) [link]
2. B. Dong^{*}, C. Li^{*}, B. Pan[†], “Ultrasensitive video extensometer using single-camera dual field-of-view telecentric imaging system”, *Optics letters*, 44(18), 4499–4502 (2019) [Link]
1. C. Li^{*}, B. Dong^{*}, B. Pan[†], “A flexible and easy-to-implement single-camera microscopic 3D digital image correlation technique”, *Measurement Science and Technology*, 30(8), 085002 (2019) [Link]

CONFERENCE PRESENTATIONS

- Jul 2025* Characterization of local poroelastic swelling near the tip of a propagating crack in a hydrogel
The 12th European Solid Mechanics Conference (ESMC) Lyon, France
- Sep 2024* Near crack tip deformation fields reveal the structure of the process zone in brittle hydrogels
The 26th International Congress in Theoretical and Applied Mechanics (ICTAM) Daegu, South Korea
- Aug 2024* Near crack tip deformation fields reveal the structure of the process zone in brittle hydrogels (invited)
The SES (Society of Engineering) Annual Technical Meeting Hangzhou, China
- May 2024* Crack tip kinematics reveal the process zone structure in brittle hydrogel fracture
The 19th European Mechanics of Materials Conferences (EMMC) Madrid, Spain
- Mar 2024* Evolution of a planar crack perturbed by a rigid inclusion (poster)
The 19th International Conference on Deformation, Yield and Fracture of Polymers (DYFP) Kerkrade, Netherlands
- Jul 2022* High-resolution quasistatic near-crack-tip deformation fields in brittle hydrogels
The 11th European Solid Mechanics Conference (ESMC) Galway, Ireland
- Oct 2020* New exploration and application of fluorescent digital image correlation
The 11th International Digital Image Correlation Society Conference (iDICs) Virtual

Jan 2020 High-throughput CTE determination of bulk materials based on DSLR and DIC
The 26th Annual Conference of Beijing Society of Theoretical and Applied Mechanics
 Beijing, China

AWARDS AND HONORS

<i>2020, 2019, 2018</i>	First-Class Academic Scholarship
<i>2019</i>	Freshman Merit Scholarship
<i>2018</i>	CSC Scholarship for Undergraduate Exchange Program
<i>2016</i>	Third Prize for the 26 th “Feng Ru Cup” Competition
<i>2015 - 2016</i>	Student Research Training Grant

TEACHING

<i>Fall 2022 - 2024</i>	Teaching assistant in Experimental Methods in Engineering Mechanics <i>École Polytechnique Fédérale de Lausanne</i>	<i>Lausanne, Switzerland</i>
<i>Spring 2022 - 2024</i>	Teaching assistant in Continuum Mechanics <i>École Polytechnique Fédérale de Lausanne</i>	<i>Lausanne, Switzerland</i>

SKILLS

Programming: MATLAB, Python, imageJ macro

Technique: 3D Particle Tracking, Digital Image Correlation (DIC), Finite Element Analysis

Laboratory: Scanning Electron Microscope (SEM), Laser Scanning Confocal Microscope (LSCM), Laser Sheet Fluorescence Microscope (LSFM), Cleanroom, Nanoscribe

Languages: Chinese (native), English (proficient)

SERVICE

Journal reviewer: Experimental Mechanics, Optics Letters, Optics Express, Applied Optics