SHUJIAN LI

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OBJECTIVE

I am applying for the **PhD program beginning in Fall 2027**, with a focused interest in **tectonics and earthquake source physics**. My goal is to deepen my understanding of rupture mechanics, contribute to advancing knowledge in the field, and receive rigorous research training in a collaborative and intellectually stimulating environment. I am especially eager to engage with projects that integrate theoretical modeling, numerical simulations, and observational data to investigate the multiscale nature of earthquake processes.

EDUCATION

Bachelor of Science in Geophysics, Southern University of Science and Technology 2022 - present
GPA:3.59/4.00 (2022-2023: 3.4/4, 2023-2024: 3.61/4, 2024-2025: **3.85/4**)

- First-class scholarship for outstanding students of the Department of Earth and Space Sciences 2024 and 2025
- Second-class scholarship for outstanding students of the Department of Earth and Space Sciences 2023
- I got an A in Mathematical Methods in Physics, Fundamentals of Geophysics (seismology), Scientific Computing and Programming, Fundamentals of Signal Processing and Data Analysis.

RESEARCH EXPERIENCE

- **Earthquake Mechanics Research Group, SUSTech** *Sep 2023 - present*
  Research Assistant
  - Research the fractal characteristics and **scale dependence in observed earthquake rupture energy.**
  - Investigate the role of **self-similarity in fault structures** to refine theoretical models of earthquake fault surface.
  - Build a model that is used to explain that the fractal dimension of the same IFS (iteration function system) for a 3D object is greater than that of a 2D object.
- **Distributed Acoustic Sensing (DAS) Research Project, SUSTech** *Sep 2024 - Feb 2025*
  Research Assistant
  - Engaged in a project applying machine learning to DAS data for automated vehicle weight and speed estimation.
  - Developed a pipeline to match manually captured vehicle images with DAS traces, enabling precise trajectory extraction and labeling.
  - Analyzed waveform data to extract vehicle weight information, contributing to a more accurate estimation model.
  - Preparing for patent submission in May 2025 based on research findings.
- **Wavefield Complexity and Source-Parameter Recovery, KAUST** *Feb 2026 - May 2026*
  Visiting Student
  - Worked on applying **F&M methods** to infer critical slip distance, D_c, from near-fault seismic waveforms.
  - Explored whether **multiple reflections and scattering** associated with fault-zone heterogeneity and boundary conditions could bias D_c estimates.
  - Investigated how overlapping direct and reflected arrivals may complicate the separation of **source information and wave-propagation effects** in near-fault observations.

FIELD EXPERIENCE

- **Structure Monitoring of a Dam** *Oct 2026*
  Instrument Technician
  - Participated in an experiment testing the structural safety of dams using Ambient Noise Imaging in Henan Province. Responsible for the deployment, monitoring, and maintenance of short-period seismic arrays and accelerometers.
  - Velocity structure profiles are inverted from dispersion curves obtained via cross-correlation; the fundamental mode is extracted and subjected to an inverse transform, while the spatial coherence fitting method is employed to derive the attenuation coefficient α.
- **Geology Field Trips** *Summer 2024*
  Field Participant
  - Participated in geological field studies in Fangshan, Beijing, and Inner Mongolia, investigating the formation and evolution of the North China Craton.
  - Conducted in-situ observations of geological structures and lithology, enhancing proficiency in field data interpretation and tectonic analysis.
- **Geophysical Field Trips** *Summer 2024*
  Field Participant
  - Conducted a 2-week geophysical field course in Yunnan Province, Southwest China, covering: Passive-source seismic station observation experiments, Artificial-source seismic observation experiments, Transient electromagnetic experiments, Magnetotelluric experiments.

Skills

- **Programming Languages:** Matlab, Linux, Python
- **Programming Skills:** Rupture Dynamic Simulation by CGFDM, Finite Difference Method for solving wave equations, heat conduction and convection problems.
- **Music:** Drum kit, Composition, Rap
- **Sport:** Swimming, Football, Badminton, Snorkeling, Indoor Rock Climbing

Honors and Awards

- Outstanding Graduate of the Class of 2022, Southern University of Science and Technology 2026
- Outstanding Undergraduate Graduation Thesis of 2026 of SUSTech 2026
- Second Prize in the 10th National College Students "Innovation Cup" Geophysical Knowledge Competition. 2025
- Winner's Prize of the China Undergraduate Mathematical Contest in Modeling. 2024
- Outstanding Volunteer of the World Youth Development Forum (national level). 2023
- China · Shenzhen Taekwondo Grade 5 Certificate. 2023
- Third place in the school band competition. 2023
- Grade 9 of Jazz Drums in the National Art Level Examination (1-10 scale). 2014