Shenyao Jin

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Education

Colorado School of Mines, Reservoir Characterization Project — Golden, Colorado
Ph.D. Geophysics — *Aug 2023 – May 2027*
- Advisor: Dr. Ge Jin, Committee Chair: Dr. Hossein Kazemi
- **Focus**: *Distributed fiber-optic sensing (DFOS), reservoir stimulation, hydraulic fracture characterization, inversion problems*
- **Minor:** *Computer Science*

Zhejiang University — Hangzhou, China
B.S. Geoscience — *Sept 2019 – Aug 2023*
- **Thesis**: "Clustering-Based Joint Inversion for Imaging Shallow Subsurface Geological Targets"
- Thesis Advisor: Dr. Zhanjie Shi

Technical Skills

- **Programming:** Python, MATLAB, C/C++, LaTeX, Bash
- **Software and Packages**: Seismic Un*x, MOOSE (Multiphysics Object-Oriented Simulation Environment), DASCore (Python Package for Distributed Acoustic Sensing), Devito
- **Geophysical Methods:** DFOS/DAS data processing and modeling, strain-pressure analysis, hydraulic fracture interpretation, signal denoising
- **Related Coursework:** Inversion Theory, Advanced Machine Learning, Reservoir Simulation, Advanced Geophysical Computing, Advanced Data Science
- **Software Development:** Author of fibeRIS, an open-source Python package for history matching and interpretation of DAS data (github.com/shenyaojin/fibeRIS).

Experience

Graduate Research Assistant — Golden, Colorado
Reservoir Characterization Project, Colorado School of Mines — *Aug 2023 – Present*
- **Project Mariner, ExxonMobil**
  - Developed a low-frequency DAS (LF-DAS) data processing workflow to monitor cement quality in horizontal wells.
  - Implemented a coupled pressure-strain numerical model using MOOSE to simulate LF-DAS responses under various cementing conditions.
  - Conducted history matching of field LF-DAS data, demonstrating the method's effectiveness in identifying cement channeling.
- **EGS Data Interpretation, Fervo Energy**
  - Collaborating with Rice University and Fervo Energy to interpret multiple types of geophysical data (e.g., DAS, sonic logs).
  - Developing a novel interpretation tool for LF-DAS data to analyze pressure-strain coupling for fracture characterization.

Graduate Research Intern — Idaho Springs, Colorado
Reservoir Characterization Project, Colorado School of Mines — *May 2025 – Aug 2025*
- Conducted a DOE project on monitoring high-voltage induced rock fracture using LF-DAS.
- Designed and successfully deployed a novel U-shaped DAS fiber optic cable in two monitoring wells, while also installing separate DTS and DSS fibers for both wells.

Undergraduate Research Intern — Golden, Colorado
Reservoir Characterization Project, Colorado School of Mines — *July 2022 – September 2022*
- Contributed to the development of data processing workflows for LF-DAS data collected in Lake Hattie, Wyoming.
- Implemented a velocity scanning algorithm for improved data interpretation.

Undergraduate Research Assistant — Hangzhou, China
School of Geosciences, Zhejiang University — *Sept 2021 – June 2023*
- Conducted research on joint inversion methods for seismic and electromagnetic data.
- Developed a joint inversion algorithm in *C++* and validated it against well log data using field datasets.

Abstracts and Presentations

Shenyao J., Ge J. *Low-Frequency DAS for Cement Quality Monitoring in Horizontal Wells*, SEG-AAPG IMAGE 2025, Houston, Texas. Oral Presentation.

Shenyao J., Ge J. *Utilizing LFDAS for Cement Quality Monitoring*, American Geophysical Union Fall Meeting 2025, New Orleans, Louisiana. Oral Presentation.

Shenyao J., Ge J. *Conductive Fracture Monitoring Using Distributed Strain Sensing: From Stimulation to Production*, SEG-AAPG IMAGE 2024, Houston, Texas. Poster Presentation.

Publications

Jin, S., and Jin, G. (2025). Low-Frequency DAS for Cement Quality Monitoring in Horizontal Wells. *SPE Journal* (finished, submission target Q4 2026); abstract will be submitted to URTeC 2026.

Mao, F., Yang, B., **Jin, S.** (2025). Recovering missing regions of earth magnetic anomaly grid data (EMAG2) using RePaint based on diffusion model. *Big Data and Earth System*, 1(1), 100004.

Honors and Awards

George R. Pickett Memorial Scholarship Oct 2024

- Awarded for excellence in borehole geophysics with applied focus on oil and gas workflows.

First-Year Fellowship for Graduate Students Mar 2024

- Awarded by the Colorado School of Mines to recognize incoming students for integrating computational geophysics to advance sustainable energy systems.

Meritorious Winner, Mathematical Contest in Modeling (MCM) Feb 2022

- Top 8% of international undergraduate teams. Contributed as lead programmer and data analyst.