

Brian Kelly

Seismologist, Geologist, Computational Modeler, Educator | bkelly2014@ufl.edu | [LinkedIn](#)

Work Experience

AI Prompt Engineer (Freelance)

Jan. 2025 - present

Scale AI

Remote

- Wrote advanced mathematics and physics reasoning prompts and edited LLM responses in a Reinforcement Learning from Human Feedback (RLHF) framework to train LLMs for various client needs
- Reviewed submissions of other engineers and provided feedback for quality assurance

Graduate Researcher & Teaching Assistant

Aug. 2019 – Aug. 2024

University of Florida

Gainesville, FL

- Processed seismic waveforms and measured travel path-dependent wave attenuation data from recordings of aftershocks of the 2015 M 8.3 Illapel, Chile earthquake
- Created an inverse model to generate a 3D wave attenuation tomography of the Illapel region using nonnegative least-squares regression with the attenuation data, parallelized on supercomputing resources
- Produced publication-quality graphs, maps and figures and interpreted results

USGS Pathways Intern

May – Aug. 2022 & May – Aug. 2023

Geologic Hazards Science Center, USGS

Golden, CO

- Verified existing models of earthquake source effect known as directivity for accuracy
- Generated database of synthetic earthquakes with spatial directivity patterns dependent on earthquake characteristics
- Built and trained artificial neural networks (ANNs) on synthetic directivity data to capture the spatial directivity effect and make predictions on real faults
- Implemented these ANNs in the research version of the USGS National Seismic Hazard Model (NSHM) to assess the impact of inclusion of directivity in ground motion models

Education

Ph.D., Geology

Aug. 2024

University of Florida

Gainesville, FL

B.S., Geology

Aug. 2018

University of Florida

Gainesville, FL

Technical Skills

Programming Languages: Python, Bash

Libraries: Tensorflow/Keras, scikit-learn, numpy, pandas, scipy, matplotlib, mpi4py, pyGMT, OpenQuake, shakelib

Software: Git, VSCode, SLURM, Seismic Analysis Code, Generic Mapping Tools, Adobe Illustrator