Alex Simpson

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Education

- Master of Science in Earth Sciences - University of Oregon - In Progress
- Seismology Skill Building Workshop - IRIS - 2021
- Improving your electrical resistivity results from survey planning through to data visualization and reporting - Guideline Geo - 2021
- Fundamentals of electrical resistivity data processing - Guideline Geo - 2021
- Bachelor of Science in Geophysics - University of Nevada, Reno - 2021

Publications and Presentations

- Simpson, Alexander R., and Louie, John N., 2021, Measurements and Predictions of Vs30, Z1.0, and Z2.5 in Nevada. Poster presented at the Geological Society of America's 2021 Cordilleran Online Section Meeting.
- Simpson, Alexander R., and Louie, John N., 2020, Measurements and Predictions of Vs30, Z1.0, and Z2.5 in Nevada (Version 2.0), publication of the Nevada Seismological Laboratory, Zenodo, December 31, 28 pp. plus data and maps, http://doi.org/10.5281/zenodo.4408557.
- J. N. Louie, A. R. Simpson, and J. Ortega, 2020, Database of geotechnical shear-wave seismic-velocity profile measurements for California and Nevada: Poster Presentation at Assoc. Engineering and Environmental Geologists AEG2020 Virtual Conference, Program with Abstracts, AEG News, 63(4), 42-43. Organized database; co-author.
- J. N. Louie, A. R. Simpson, and J. Ortega, 2020, Database of geotechnical shear-wave seismic-velocity profile measurements for California and Nevada: Poster Presentation #226 at 2020 SCEC Annual Meeting. Organized database; co-author.

Teaching Experience

- TA, ERTH 201 - Dynamic Planet Earth. Fall 2022

Professional Experience

July 2022:Present - Graduate Teaching Fellow - University of Oregon

- Create a numerical groundwater model
- Critically evaluate sources and information
- Survey planning and execution
- Data acquisition and processing
- Professionally communicate results
- TA classes and lab sections

May 2021:Sep 2021 - Junior Geophysicist - CTEMPS - University of Nevada, Reno

- Processed Ground Penetrating Radar data
- Processed Electrical Resistivity Tomography data
- Modeled Gravity data using Oasis Montaj
- Analyzed drone structure from motion data in point cloud form
- Used a survey grade GPS for data acquisition
- Deployed seismic nodal array in refraction microtremor survey
- Worked with interdisciplinary teams to achieve survey goals
- Conducted geophysical surveys: ERT, IP, GPR, ReMi, Drone Photogrammetry, Gravity
- Plotted data with ArcMap

Nov 2019:Mar 2021 - Student Worker - Nevada Seismological Lab - Reno, Nevada

- Performed research under the guidance of Professor John Louie
- Performed quality assurance of a refraction microtremor (ReMi) data set to USGS project guidelines
- Automated quality assurance using MATLAB and Excel
- Organized data into a central database for use by a team of 9 people, and the public. Database can be found at louie.pub under “Vs(z) Profile Archive”
- Used Python to collate data from the archive, and mapping bedrock depths using that data
- Used MATLAB to relate bedrock depths from shear velocity profiles to gravity measurements
- Presented weekly reports of project progress in a team meeting and a one-on-one meeting

Certificates

- FAA Remote Pilot Certificate - expires August 2023.
- First Aid Certification

Honors and Awards

- Recipient of the 2020-2021 Shirley A. and Stanley H. Ward scholarship from the Society of Exploration Geophysicists
- UNR College of Science Dean's List: Spring 2018, Fall 2018, Spring 2019, Spring 2020

Skills

- Science communication
- Coding: Python, MATLAB, Julia, HTML
- Geophysical survey and data analysis
- Numerical Modeling
- GIS