

NAVIN THAPA

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EDUCATION

- PhD in Earth Sciences (Major: Geophysics), 3rd Year** **2021-Present**
CERI, The University of Memphis, TN, USA
Research area: Induced Seismicity, Volcanic seismicity, Statistical Seismology, Laboratory earthquakes and physics of faulting, Repeating earthquake.
Advisor: Dr. Thomas Goebel
- MSc. in Geology (Major: Engineering Geology),** **2015-2017**
Tribhuvan University, Kathmandu, Nepal
Dissertation title: Frequency Dependent Damage Pattern in Kathmandu Valley Due to Mw 7.8 Gorkha Earthquake
- Bachelor of Science (Combination: Geology, Physics and Mathematics),** **2010 -2013**
Tri-Chandra Multiple Campus, Tribhuvan University, Kathmandu, Nepal

COMPLETED GRADUATE COURSEWORK

Global Seismology (CERI-8105), Signal Processing in Earth Science (CERI-8106), Data Analysis in Geophysics (CERI-8104), Introductory Global Geophysics (CERI-8211), Inverse Methods in Geophysics (CERI-8260), Probabilistic Earthquake Hazard Analysis (CERI-8204), Programming Tools (CERI-8102), Near Surface Geophysics (CERI-8214), Exploration Seismology (CERI-8230), Seismotectonics (CERI-8280), Independent Research Study (CERI-7621)

PROFESSIONAL EXPERIENCE

- Geophysicist, Co-Founder**
MANIFOLD CONSULT PVT. LTD. 08/2018-12/2020
- Conducted Geophysical Investigation: Electrical Resistivity Tomography Survey (ERT), Vertical Electrical Sounding, Seismic Refraction Tomography Survey (SRT), Multichannel Analysis of Surface Wave Survey (MASW), Microtremor Array Measurement (MAM), Data Acquisition, Analysis, and Interpretation, and Report Writing.
 - Conducted geologic and engineering analyses including soil and rock slope stability, rock mass characterization, block modeling, and liquefaction analyses.
 - Worked directly with clients to ensure scope is clearly defined and understood, disseminating to Manifold personnel for technical support, overseeing and managing implementation to meet scope, schedule, and budget constraints.
- Project Geologist**
ERMC GEOTECH PVT. LTD. 04/2018-08/2018
- Geological Mapping, Geo-technical Investigation and testing materials, Engineering Geological Investigation, Data Analysis, and Interpretation, and Report Writing.
 - Assisted geologic and hydrologic studies, including fieldwork, and other hydrologic, geologic, and geophysical tasks both locally and nationally. East West Railway Project; Sunkoshi Hydropower Project

Projects:

- Feasibility Study of East-West Electrified Railway Project, Package-03
- Geotechnical Study of Siwa Khola Hydropower Project, 9.3 Mega Watt
- Geotechnical Study of Simbuwa Khola Hydropower Project, 70.34 Mega Watt

Assistant Geophysicist

Investigated and measured seismic, electrical properties of affecting earth, Geophysical data analysis and interpretation, report writing, geological and engineering geological investigation of various projects.

PUBLICATIONS

- **Thapa N**, Pandey K, Ghimire S, Acharya KK (2020) Frequency Dependent Damage Pattern in Kathmandu Valley Due to Mw 7.8 Gorkha Earthquake. J Geol Geophys 9:471.10.35248/2381-8719.20.9.471

CONFERENCE ABSTRACTS

- Goebel, T., Kwiatek, G., Davidsen, J., **Thapa, N.**, Georg, D., (2023) Micro-Seismicity Clustering, Aftershock Decay and b-Values During Laboratory Fracture and Stick-Slip Experiments, Annual Meeting 2023 Seismological Society of America, V.94, 2B, pp.1152.
- Thapa, N., Dresen, G., & Goebel, T. (2023). Does b-value Increase with Higher Pore Pressure? AGU23.
- Pandey, K., **Thapa, N.**, Dresen, G., & Goebel, T. (2023). Repeating Micro-Seismic Events on Laboratory Faults with Different Roughness and Gouge Composition. AGU23.
- Hosain, Alamgir, Thomas Goebel, Sonia Bazargan, **Navin Thapa**, Sadia Marium Rinty, Khadija Nadimi, Hadi Heydarizadeh Shali, and Kuruvitige Chameera Silva. "Dynamic Triggering of Earthquakes in the Central and Eastern USA." AGU23 (2023).
- Durga Acharya, **Navin Thapa**, Subarna Dhakal, Indra Lamsal, Prakash Luitel, M Kaj Johnson (2023). Surface Roughness Evaluation in Anisotropic Rocks. AGU Annual Meeting 2023.

TRAINING AND WORKSHOP

Distributed Acoustic Sensing RCN Workshop

July 2023

EarthScope, University of Wisconsin-Madison, WI

- Collaborated on setting a vision for DAS technology advancement and applications across disciplines.
- Applied for and received travel support to attend the workshop, showcasing commitment and enthusiasm for DAS research.

Generalist Electromechanics for Applied Researchers (GEARs) Workshop

August 2022

Leeman Geophysical LLC, Siloam Springs, Arkansas

- Construction of Magnetometer using Arduino board and sensors
- Hands-on training on welding, grinding, cutting, gluing, lasering, milling etc.
- Training on sensors communication with controllers and each other.
- Created a data logging program to run on a microcontroller and collect/store measurements.

Finite element modelling using PyLith

June 2022

USGS, Golden CO

- Overview of use of PyLith for finite element modeling of crustal deformation, with an emphasis on interseismic, coseismic, and post seismic deformation.
- Learned meshing with complex geometry using CUBIT, ParaView and hands on exercise on simulate crustal deformation across spatial scales from 1 m to 103 km and temporal scales ranging from 0.01 s to 105 years.

ACADEMIC RESEARCH PROJECTS

2023 Sep. – Dec.	Develop python program for “Dynamic Triggering of Earthquakes in the Central and Eastern USA”
2022 Jan. - May	Processing of Seismic Reflection Survey Data of Sugar Creek Fault Area, West Tennessee
2022 Jan. - May	Denosing seismic signal using deep autoencoder
2022 Jan. - May	Seismic event location using Grid-search and Monte Carlo Techniques for Acoustic Emission recorded in laboratory shear experiment
2021 Sep. -Dec.	Development of python function for estimation of Gutenberg-Richter b-value from maximum likelihood method
2021 Sep. -Dec.	Short Time Fourier Transform and Continuous Wavelet Transform of Laboratory Earthquake