

## Kiran Pandey

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As an earth scientist with over 9 years of experience in research, consulting, and fieldwork, I have a proven track record of conducting geophysical investigations, geological mapping, geotechnical assessments, and laboratory analysis. I'm also about to earn my Ph.D. in geophysics. I'm skilled at using advanced techniques and technologies to collect and analyze geological/geophysical data and provide valuable insights and recommendations for project success. I'm a team player with strong leadership skills and excel at managing field teams, coordinating logistics, and ensuring resources are used efficiently. I'm dedicated to delivering high-quality results while following safety protocols and environmental regulations.

### EDUCATION

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| • <b>PH.D. IN GEOPHYSICS, UNIVERSITY OF MEMPHIS</b>                  | <b>[EXPECTED: DEC-2023]</b> |
| • <b>MASTER OF SCIENCE IN EARTH SCIENCES, UNIVERSITY OF MEMPHIS</b>  | <b>[2022]</b>               |
| • <b>MASTER OF SCIENCE IN GEOLOGY, TRIBHUVAN UNIVERSITY, NEPAL</b>   | <b>[2017]</b>               |
| • <b>BACHELOR OF SCIENCE IN GEOLOGY, TRIBHUVAN UNIVERSITY, NEPAL</b> | <b>[2013]</b>               |

### SKILLS

Geophysical Investigations	Geological Mapping	Geotechnical Assessments
Laboratory Analysis	Project Management	Field Team Leadership
Logistics Coordination	Data Analysis and Interpretation	Safety Compliance

### PROFESSIONAL EXPERIENCE

#### CERI, UNIVERSITY OF MEMPHIS

##### Research/Teaching Assistant 08/2019 – PRESENT

- Instrumented transient strain and acoustic emission measurements in laboratory-scale earthquake experiments.
- Conducted theoretical studies on earthquake physics, including investigations of pore pressure and microseismicity statistics.
- Created and investigated repeating earthquakes in laboratory stick-slip experiments.
- Utilized seismic velocity monitoring and interferometry techniques to study lab and natural earthquakes.
- Applied digital image processing techniques to analyze laboratory slip behavior and capture detailed information.
- Used statistical feature selection from seismic wave data to classify types of volcano-related events.
- Served as a teaching assistant for an honor class on *Earthquakes in Hollywood*.
- Conducted comprehensive geological mapping of Eastern Tennessee and Western Arkansas as an integral part of Narayan Adhikari's Ph.D. research. (Department of Earth Science, University of Memphis).

#### MANIFOLD CONSULT PVT. LTD.

#### KATHMANDU, NEPAL

##### Consulting Geophysicist

##### 08/2016 – PRESENT

- Performing fieldwork for geophysical investigations, including various techniques such as Electrical Resistivity Tomography Survey, Vertical Electrical Sounding, Seismic Refraction Tomography Survey, Multichannel Analysis of Surface Wave Survey, and Microtremor Array Measurement.
- Managing and coordinating geophysical survey projects for various clients.
- Conducting extensive research and analysis to develop proposals and reports.
- Interpreting geophysical data to provide insights and recommendations for clients.
- Meeting with clients to understand project requirements and providing technical expertise.
- Preparing and delivering presentations to effectively communicate project findings and recommendations.
- Collaborating with multidisciplinary teams to integrate geophysical data with other project components.
- Ensuring compliance with health, safety, and environmental regulations during fieldwork.

- Skilled in conducting geophysical surveys using electrical resistivity methods for water resource exploration.

**Key Projects:**

- Seismic hazard analysis of Dhap Dam project, Bagmati River Basin Improvement Project, Ministry of Urban Development, Government of Nepal.
- Geophysical Investigation of Sunkoshi –II (1,110 MW) and Sunkoshi-III (536 MW) projects, ERM P. Ltd., Nepal.
- Geophysical (Seismic and Resistivity) Investigation of Railway Alignment Package – 04, SILT Consultants (P.) Ltd., Nepal.
- Geophysical Survey (2D-ERT) of Banepa Domestic Airport, Geotech Solutions Internationals Pvt. Ltd., Nepal.
- 2D-ERT Survey for Groundwater Exploration Chipur, Ajaymeru-04 Nepal, Local Government project.
- Study the role of rainwater-filled recharge pits and Ponds to increase the yield of existing spring sources using the 2D-ERT Geophysical Method, Local Government project.
- And many more.

**ERM GEOTECH SERVICES PVT. LTD., KATHMANDU, NEPAL**

**Engineering Geologist: 01/2017 – 07/2019**

- Managed and led field teams for geotechnical assessments of railway projects, bridges, and hydropower initiatives. Oversaw drilling operations and ensured adherence to project specifications.
- Conducted detailed engineering geological mapping of railway alignments and hydropower sites to assess geological conditions and identify potential risks.
- Verified logs and analyzed soil profiles to assess geological characteristics and inform engineering decisions.
- Planned and supervised drilling operations, including logistics and field coordination, for collecting soil samples to evaluate their suitability as construction materials and determine subsurface conditions.
- Conducted geophysical surveys to study subsurface structures and identify potential geological hazards.
- Tested collected samples in the laboratory and provided recommendations for foundation design and construction materials.
- Prepared comprehensive reports summarizing geotechnical findings, recommendations, and management strategies.
- Assisted in developing geotechnical reports, interpreting laboratory test results, and providing recommendations for slope stability and foundation design.
- Managed and mentored field teams, providing training and guidance in mapping, soil sampling, laboratory testing, and report preparation.
- Coordinated logistics and ensure efficient utilization of resources for field operations.

**Key Projects:**

- Mechi-Mahakali Electric Railway Package-1 & 3 (~200 KM), Department of Railway, Government of Nepal.
- Disaster Resilience School Projects (DRSP) - 274 schools, Asian Development Bank.
- Seti River-6 (SR-6) Hydroelectric Project (450 MW), Department of Electricity Development, Government of Nepal.
- Nalgad Hydroelectric Project (417 MW), JV of SMEC International Australia and MWH International INC, USA, in association with UDAYA Consultancy, Nepal.
- Naumure Multipurpose Project (225 MW), JV of Acciona Madrid, Spain and ERM P. Ltd., Nepal.
- Sunkoshi-II & III Storage Hydroelectric Project (1110 MW), JV of Shanghai Investigation Design & Research Institute Co. Ltd. and ERM P. Ltd., Nepal.
- And many more.

**CENTER FOR GEO-ENVIRONMENT AND ENGINEERING RESEARCH (CGER), LALITPUR, NEPAL**

**Engineering Geologist: 11/2016 – 01/2017**

- Conducting detailed engineering geological mapping for hydropower, landslides, and building projects, including site investigations, slope stability assessments, and foundation design.
- Performing field geophysical surveys using techniques such as Multi-channel Analysis of Surface Waves (MASW), Electrical Resistivity Tomography (ERT), and Seismic Refraction Tomography (SRT) for subsurface characterization.
- Analyzing geological and geophysical data obtained from MASW, ERT, and SRT surveys, interpreting results, and preparing comprehensive reports with recommendations for construction and infrastructure development.
- Operating and maintaining geophysical equipment and instruments during field surveys, including MASW, ERT, and SRT equipment, ensuring data quality and accuracy.

**Key Projects:**

- Palun Khola Small Hydropower Project (21 MW), Sanima Hydro & Engineering Pvt. Ltd.
- Hongu Khola Hydropower Project (28.9 MW), Union Hydropower Public Ltd.
- Upper Inkhu Khola Hydropower (24.4 MW), Hydro-consult Pvt. Ltd.
- And many more.

**FREELANCING GEOLOGIST: 12/2014 – 11/2016**

- Conducted field investigations and geological mapping to assess the geological and geomorphological characteristics of landslide-prone areas and hydropower project sites.
- Conducted field investigations and geological mapping to assess the geological and geomorphological characteristics of landslide-prone areas and hydropower project sites.
- Assessed geological stability along access roads for hydropower projects, identifying potential landslide-prone areas and unstable slopes.

**PUBLICATIONS & PROJECTS**

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Research articles:

- Pandey, K., Taira, T., Dresen, G., & Goebel, T. (2023). Inferring fault damage state and evolution from coda wave velocity changes in faulted and intact granite samples at varying stress. [in prep., preprint available]
- Adhikari, N., Pandey, K., Bhattarai, R., & Cox, R.T. (2023). Using basin asymmetry indices to predict bedrock's dip from topographic data. [in prep., preprint available]
- Thapa, N., Pandey, K., Ghimire, S., & Acharya, K. (2020). Frequency-dependent damage pattern in Kathmandu Valley due to Mw 7.8 Gorkha earthquake. *J. Geol. Geophys.* 9:471.
- Pandey, K., Thapa, N., & Ghimire, S. (2017). Source Mechanism of 2015 Gorkha Earthquake and its largest aftershock. [Abstract]. *Journal of Nepal Geological Society*. Volume 53 (special issue). P. 170.
- Source Mechanism of 2015 Gorkha Earthquake and its largest aftershock. [Master Thesis]. Central Department of Geology, Tribhuvan University, Nepal.

Projects:

- Employed random forest classifier to identify and classify seismic events associated with volcanic activity, classifying random volcanic events into volcano-tectonic events, long-period events, and tremors.
- Denoising seismic signals using a deep autoencoder, achieving generating synthetic seismic signals, adding random Gaussian noise, and extracting clean signals.
- A quantitative analysis of the differences in background seismicity between continental margins and intraplate earthquakes.
- Governing equation, fault interface condition, implementation, and visualization of PYLITH software.
- Post-2015 Gorkha Earthquake: Analysis of the State of Stress Field in Nepal.
- Analyzing accelerometer data and discussing the strong ground motion in Kathmandu Valley: A case study of 7.8 Mw 2015 Gorkha earthquake, Nepal.
- Analysis of aftershock sequences of 2015 Mw 7.8 Gorkha Earthquake Nepal with Coulomb 3 Program.
- 1D DC Resistivity Inversion Using Damped Least Squares Method.
- 2018 Mw 6.9 Leilani Estates Earthquakes and line of sight displacement shown by Sentinel-1 Interferometry.
- Probabilistic Seismic Hazard Assessment of the New Madrid Seismic Zone: A Statistical Approach.