Sabari Nathan, C.

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Education

PhD **Vellore Institute of Technology (VIT), Vellore** 2021 – Present
Subject: Landslides and Geophysics
Advisor: Dr.G.P. Ganapathy
Thesis: Invesitagion of Slope Deformation Behavior Using Rainfall Thresholds and Ground Vibrations Along the Landslide Transport Network Interaction Corriodrs in Parts of the Nilgiris District, Tamil Nadu, India.

MSc **University of Madras, Chennai** 2018-2020
Subject: Applied Geology
Advisor: Dr. Rajeshwara Rao
Thesis: An Baseline Study of Epiphytal Foraminifera from Seagrass and Seaweeds, Gulf of Mannar, Bay of Bengal, India.

BSc **Thiruvalluvar University, Vellore** 2015-2018
Through Jawahar Science College, Neyveli
Subject: Geology

Experience

Teaching cum Research Assistant (Fellowship) Dec 2021 – Dec 2023
Vellore Institute of Technology Vellore, 632014 Tamil Nadu, India

Intern – Earthquake & Geophysics June 2019
Wadia Institute of Himalayan Geology Dehradun, 248001, Uttarakhand

Intern - Hydrogeology May 2019
Central Ground Water Board Bangalore, 560102, Karnataka

Professional summary

Areas of Interest
Landslides; Earthquakes; Disaster Mitigation and Management; Environmental geochemistry

Programming and Software Skills
ArcGIS, QGIS, MS Office, Power BI, JMP pro17, Res 1D, 2D & 3D, Seisan, RStudio, WinMASW and Waves

Instruments and Field Techniques
Experienced in operating Vibration Monitoring System, Multi-channel Analysis of Surface Waves (MASW), Electrical Resistivity Tomography (ERT), X-ray fluorescence (XRF), Spectrophotometer, Flame photometer, Resistivity Meter, Atomic Absorption Spectrometer (AAS), Petrological and Paleontological Microscopes

Programming and Data Analysis
Proficient in R & Python for statistical computing and data visualization, Machine Learning, and MATLAB for Seismic Data Processing.

Scientific visualization & Technical Design
Skilled in Photoshop, Illustrator, and Procreate for scientific visualization and technical illustrations and data presentation.

Awards

1. Raman Research Award from Vellore Institute of Technology (VIT) for research paper. June 2024. Awarded by the O/o Academic Research.
2. Awarded "International Travel Scheme (ITS)" grant from Anusandhan National Research Foundation (formerly SERB) to travel and present a paper at the American Geophysical Union (AGU) in San Francisco, USA.

3. Secured first rank in B.Sc., Geology from Thiruvalluvar University, Vellore, 632115 (through Jawahar Science College, Neyveli, 607308.)

4. Secured (1st Prize for Speech Competition on "Disaster Management and Mitigation" from the District Collector, Cuddalore through Jawahar Science College, Neyveli, 607308.)

Professional training received

1. Training on "Hands-on training on Earthquake Scenario" (2022) organized by District Disaster Management Authority (DDMA)– Vellore, National Disaster Response Force (NDRF), In coordination with Centre for Disaster Mitigation and Management (CDMM), Vellore Institute of Technology, Vellore, 632014, Tamil Nadu, India.

2. A practical approach to the seismic method using Python and Machine learning, Institute of Smart Structures and Systems (ISSS), by Indian Institute of Science (IISc), Bangalore, Karnataka.

3. Informea Diploma on the International Legal Framework on the Protection of the Atmosphere, UNITAR.

4. E-training of the fundamentals of Aero-geophysical survey, GSI Training Institute, Hyderabad.

5. Introduction to Human Rights and the Environment, International Legal Framework on Transboundary Air Pollution, and Global Framework for Pollution Free Planet, UNITAR.

Publications

Peer-reviewed publications

1. **Sabari Nathan, C.**,& Ganapathy, G. P. (2024). Quantifying the impact of changing rainfall patterns on landslide frequency and intensity in the Nilgiris District of Western Ghats, India. Progress in Disaster Science, 23, 100351.
https://doi.org/10.1016/j.pdisas.2024.100351 *

2. V. Gopal, R.R. Krishnamurthy, R. Vignesh, **C. Sabari Nathan**, R. Anshu, R. Kalaivanan, P. Mohana, N.S. Magesh, K. Manikanda Bharath, A.Z. Ekoa Bessa, K. Abdelrahman, M. Abioui. (2023). Assessment of heavy metal contamination in the surface sediments of the Vedaranyam coast, Southern India, Regional Studies in Marine Science, 103081, ISSN 2352-4855.
https://doi.org/10.1016/j.rsma.2023.103081 *

3. Gopal, V., Krishnamurthy, R. R., Sreeshma, T., Chakraborty, P., **C. Sabari Nathan.**, Kalaivanan, R., Jayaprakash, M. (2021). Effect of a tropical cyclone on the distribution of heavy metals in the marine sediments off Kameswaram, Southeast coast of India. Marine Pollution Bulletin, 171, 112741.
https://doi.org/10.1016/j.marpolbul.2021.112741 *

Conference proceedings – published

1. **Sabari Nathan, C.**, & Ganapathy, G. P. (2023, December). Evaluation of Precipitation Indices as a Landslide Triggering Factors in Parts of the Western Ghats, India. AGU Fall Meeting Abstracts, 2023, NH13D-0714.
https://ui.adsabs.harvard.edu/abs/2023AGUFMNH13D0714N/abstract *

2. **Sabari Nathan, C.**, & Ganapathy, G. P. (2024, December). A Spatio-geophysical Approach for Landslide Hazard Mitigation in the Nilgiris Region, Western Ghats, India. AGU Fall Meeting Abstracts, 2024, NH11B-2221.

Papers are in progress

1. **Sabari Nathan, C.**, Rajeshwara Rao., Prakasewar, P. & Gopal, V. (2022). An initial investigation of epiphytic foraminifera from seagrass and seaweed on Rameswaram Island, Southeast India. Science of Total Environment (Status: under review)

2. V Gopal., R.R Krishnamurthy., R Deepika., **C. Sabari Nathan.**, R Manikanda Bharath., N.S Magesh., Ramamoorthy., A. (2024). Assessment of Heavy Metal Contamination in Urban Rivers: Spatial Distribution, Human Health Risks, and Statistical Analysis. Aquatic Toxicology. (Status: under review)

3. **Sabari Nathan, C.**, & Ganapathy., G.P. (2024). Quantifying Land Subsidence and Characterizing Subsurface Conditions Using InSAR and Geophysical Techniques in the Nilgiris region, Western Ghats, India. (Status: under preparation)

4. **Sabari Nathan, C.**, Sen, P., Saravana Ganesh Manoharan & Ganapathy, G.P. (2024). Investigating the Recurrence of Landslides in the Nilgiris Mountain Railway: A Multi-Factor Analysis Using Historical Data (1957–2022). (Status: yet to be submitted)

5. **Sabari Nathan, C.** & Ganapathy, G.P. (2024). Understanding Hydrological Behavior and Slope Dynamics for Enhancing Early Warning Systems for Landslides: An Overview. Earth and Environmental Sciences. (Status: under review)

6. **Sabari Nathan, C.** & Ganapathy, G.P. (2024). Evaluation of Ground Conditions and Vehicle-Induced Vibration Using Spatio-Geophysical Approach for The Nilgiris Landslide Transportation Interaction Corridor, Western Ghats, India. Geomatics, Natural Hazards and Risk (Status: under preparation)

Workshop/seminars/conferences etc...

Organized

1. Two-week workshop on Geospatial Applications in Disaster Management, sponsored by ISRO and organized as a student coordinator committee member at Vellore Institute of Technology (VIT), Vellore, 632014, Tamil Nadu, India.

2. "Earthquake mock drill Scenario" by District Disaster Management Authority (DDMA) – Vellore organized by National Disaster Response Force as a member coordinator in coordination with Centre for Disaster Mitigation and Management (CDMM), Vellore Institute of Technology (VIT), Vellore.

Attended

1. Workshop on Proposal Writing Using NASA ROSES as an Example, (2024) Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, USA.

2. 13th International Congress on Climate Change, Territorial Classification and Socio-economic Crisis" (2019) conducted by the Department of Geology and Department of Applied Geology, University of Madras, Chennai.

3. International Association of Sedimentologists – Special Lecture (towards a new generation of facies models for fluvial system and their deposit) (2019) conducted by the Department of Earth Sciences, Annamalai University, Chidambaram.

4. Coastal Management with reference to water resources. (2019). Workshop conducted by the Department of Applied Geology, University of Madras, Chennai.

5. Workshop on Applied Micropaleontology, with special reference to Foraminifera and Ostracoda. (2020). Workshop conducted by the Department of Applied Geology, University of Madras, Chennai.

6. International Conference on Paleoclimate Changes (IPCC-2020) (2020) conducted by the Geosciences Research Lab, School of Civil Engineering, Vellore Institute of Technology (VIT), Chennai.

7. Webinar on "Petrological Studies" (2020) organized by the Department of Geology, Alagappa University, Karaikudi, Tamil Nadu.

8. Lecture on "The Ladakh Ophiolites: The Story of Ancient Cells" (2020) organized by KJ Somaiya College of Science and Commerce, Mumbai, Maharashtra.

9. Webinar on "Advanced Techniques in Groundwater Resources Management" (2020) organized by Centre for Water Resources Development and Management, Kozhikode, Kerala.

10. Workshop on Statistical Discovery workshop using JMP® (2022) organized by Vellore Institute of Technology and JMP® at Vellore Institute of Technology, Vellore, Tamil Nadu.

11. Workshop on "Satellite data ordering and workshop through BHOONIDHI – 2022" (2022) by National Remote Sensing Centre, ISRO.
12. Geospatial Technology for Coastal Disaster Studies and Management - (GEO-CODISM). (2022). Workshop organized by Annamalai University, Chidambaram, Tamil Nadu.
13. The basic concept of numerical modeling of the Atmosphere and Ocean. (2022). Workshop organized by DST-Science and Engineering Board (SERB) and Vellore Institute of Technology (VIT), Vellore, Tamil Nadu.
14. A one-day workshop on Data Analysis in Python and R using STATCRAFT on 6th March 2024, Vellore Institute of Technology (VIT), Vellore, Tamil Nadu, India.
15. A one-day online workshop titled "Utilities of Sun-Induced Chlorophyll Florescence in Vegetation Studies" was conducted by the Indian Institute of Remote Sensing (IIRS), Dehradun, India.

Newspapers/review

1. Rain and roads: Both spell landslides for Nilgiris, Says study. (2024, August 1). Times of India. Retrieved August 3, 2024, from https://timesofindia.indiatimes.com/city/chennai/rain-and-roads-both-spell-landslides-for-nilgiris-says-study/articleshow/112146984.cms *

Membership in professional societies

1. Terra (Geology Club - Jawahar Science College, Neyveli)
2. American Geophysical Union (AGU) – Student and Early Career Committee Natural Hazards (Jan 2025 - Dec 2026)
3. Seismological Society of America (SSA) – Student member
4. Society of Exploration Geologists (SEG) – Student member
5. Tamil Nadu Geologist's Association