Curriculum vitae

Dibyashakti Panda

Email: dibyashakti1@gmail.com; dpanda@iitb.ac.in
Website: https://sites.google.com/view/dibyashakti-panda
ORCID: 0000-0002-3190-9693
Phone: +91 9658941641

PERSONAL INFORMATION

Date of Birth: 13th November, 1993

Birth Place: Odisha, India

Citizenship: Indian

EMPLOYMENT AND EDUCATION

Aug 2025 — present: **Assistant Professor,** Central University of Tamil Nadu (CUTN), Thiruvarur, Tamil Nadu, India

Feb 2025 — present: **Postdoctoral Fellow,** Indian Institute of Technology Bombay (IITB), Powai, Mumbai, India
Advisor: Srinivasa Rao Gangumalla
Topic: Characterizing the interseismic deformation along the Himalayan megathrust by using L-band Interferometric Synthetic Aperture Radar (InSAR) imagery

Oct 2024 — Feb 2025: **Principal Project Associate,** National Remote Sensing Centre (NRSC, ISRO), Hyderabad, India
Advisor: Priyom Roy
Topic: Strain Estimation for Earthquake Studies in the Himalayan Arc (SEESHA)

Sep 2022 — Sep 2024: **Fulbright-Nehru Postdoctoral Fellow**, The University of New Mexico, Albuquerque, New Mexico, United States of America
Advisor: Eric O. Lindsey
Topic: Interseismic plate coupling, the role of topography, and long-term fault behavior, along the Himalayan megathrust

Jul 2016 — Aug 2022: **Doctor of Philosophy (PhD)**, NIT Rourkela
Advisor: Bhaskar Kundu
Topic: Geodynamics of the Indo-Burmese Arc: Northwest Sunda Arc

Jul 2014 — Jun 2016: **Master of Science (MSc)** in Applied Geology, NIT Rourkela, Odisha, India (94%; Institute Silver Medal)

Jul 2011 — Jun 2014: **Bachelor of Science (BSc)** in Geology (Honors), Dharanidhar (Autonomous) College, Odisha, India (80.33%)

RESEARCH INTERESTS

- Crustal deformation; plate-motion characterization; estimating slip rate deficit and earthquake potential estimation across fault systems (e.g., Himalayan plate boundary, the Indo-Burmese Arc, the Eastern Himalayan Syntaxis, and the Karakoram Fault System in Northwest India)
- Processing and modeling of InSAR observations for the analysis of earthquake hazards (e.g., characterizing the interseismic line of sight displacements from L-band and C-band SAR imageries along subduction zones, defining the fault geometry from co-seismic interferograms)
- Tectonic and climatic interactions process (e.g., the seasonal dependency of micro-seismicity modulation in the Himalayas); plate-interior vs. plate-boundary deformation (e.g., the New Madrid Seismic Zone, central United States)
- Reservoir-induced seismicity (e.g., seismicity associated with the Tehri and Koyna-Warna Reservoir, India); the influence of anthropogenic activity on seismicity modulation (e.g., the 2015 Magnitude 7.8 Gorkha Nepal earthquake, the 2017 Magnitude 7.3 Iran-Iraq border earthquake)
- Lithosphere-Ionosphere coupling processes (e.g., change in Ionospheric electron content due to earthquakes and solar eclipse); volcano-induced lithospheric deformation process (e.g., magmatic and faulting processes in the May 2018 eruptive sequence at Kīlauea volcano, Hawaii)
- Volcano-tectonic interaction process and its possible dependency on rainfall events (e.g., the role of extreme rainfall events and volcano-tectonic deformation process at Mount Etna, Italy)
- Climate-induced seasonal deformation and associated seismicity modulation process using geodetic and satellite data (e.g., deep slow-slip event along the Himalayan Arc controlled by seasonal hydrologic loading)

TEACHING INTERESTS

- I have a strong interest in teaching the **Structural Geology** course at both graduate and undergraduate levels
- At **CUTN**, I am currently taking the following **M.Sc. courses** – **Mineralogy and Crystallography** (Theory and Practical), **Engineering Geology** (Theory), and the following Ph.D. coursework – **Research Methodology** (Theory)

- During my stint as a postdoctoral fellow at IITB, I have taken a theory class related to the **Principles of GNSS and its Applications in Geodesy for M.Sc. Geophysics** students.

- Lead M.Sc. Geophysics students at IITB in a **field demonstration** of the setup and operation of a **GNSS station**

- During my PhD, I assisted basic theory classes in Structural Geology, Active Tectonics, Tectonic Geodesy, and Geophysical Methods. I have also conducted practical classes related to Structural Geology, along with field training programs (e.g., Rourkela, India, and surrounding regions) for undergraduate students

GRANTS & AWARDS

- 2022: Awarded Fulbright-Nehru Postdoctoral Research fellowship (for 24 months) at the University of New Mexico, USA
- 2022: Awarded Humboldt Research fellowship program (for 24 months) in Germany provided by Alexander von Humboldt Foundation (*forgo for better prospects*)
- 2022: Selected for Post-Doctoral fellowship (for 12 months) from King Abdullah University of Science and Technology (KAUST), Saudi Arabia (*forgo for better prospects*)
- 2022: Selected Post-Doctoral fellowship (for 24 months) from Geological Survey of Israel, Israel (*forgo for better prospects*)
- 2021: Awarded SERB National Post-Doctoral fellowship (NPDF) (for 24 months) provided by the Department of Science and Technology, Government of India (*forgo for better prospects*)
- 2020: Qualified National Eligibility Test (NET) for Lectureship/Assistant Professor (All India Rank: 1)
- 2019: Second position in Science Category during Research Scholars Week (RSW), NIT Rourkela
- 2018: Received International Travel Support from the Science and Engineering Research Board (SERB), India for the American Geophysical Union (AGU) Fall Meeting 2018, Washington D.C., United States of America
- 2018: Received AGU Student Travel Grant for AGU Fall Meeting 2018, Washington D.C., United States of America
- 2017: Awarded Institute Silver Medal in M.Sc. Applied Geology (2014-2016) from NIT Rourkela
- 2016, 2017: Qualified GATE: 2016 (All India Rank- 596); 2017 (All India Rank- 389)
- 2014-2016: Awarded scholarship from the Institute of Mathematics and Applications, Bhubaneswar, Odisha

Published manuscripts

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1. **Panda, D.,** & Lindsey, E. O. (2024). Overriding plate deformation controls inferences of interseismic coupling along the Himalayan megathrust. Journal of Geophysical Research: Solid Earth, 129(9), e2024JB029819.
2. Sahoo, S., Senapati, B., **Panda, D.,** Jin, S., & Kundu, B. (2024). Tidal triggering of seismic swarm associated with hydrothermal circulation at Blanco ridge transform fault zone, Northeast Pacific. Physics of the Earth and Planetary Interiors, 107259.
3. Senapati, B., Lindsey, E. O., Kundu, B., **Panda, D.,** Tiwari, D. K., & Yadav, R. K. (2024). 'Double Puzzle'at the Shumagin seismic gap, Alaska Peninsula: intraslab strike-slip faulting loaded by lateral variations in megathrust fault friction. Geophysical Journal International, 236(3), 1471-1483
4. Senapati, B., **Panda, D.** and Kundu, B. (2023). Solid-earth tidal modulations of 2019 Ridgecrest earthquake sequence, California: any link with Coso geothermal field?. Journal of Seismology, 27(4), 737-751
5. Sen, R., **Panda, D.,** Kundu, B. and Santosh, M. (2023). Mountain height as a proxy for the cessation of active plate convergence. Geosystems and Geoenvironment, 2(4), 100189
6. Sen, R., **Panda, D.,** Kundu, B. and Santosh, M. (2023). Segmentation of continental Indian plate by the Narmada-Son diffuse plate boundary. Geological Journal, 58(4), 1428-1441
7. **Panda, D.** and Kundu, B. (2022). Geodynamic complexity of the Indo-Burmese Arc region and its interaction with Northeast Himalaya. Earth-Science Reviews, 226, 103959
8. Kundu, B., Gahalaut, V.K. and **Panda, D**. (2022). Two decades of progress in the understanding of the Indo-Burmese Arc plate circuit. Current Science, 123(3), 259.
9. **Panda, D.,** Samanta, S. K., Singh, M. D., Gahalaut, V. K. and Kundu, B. (2022). Low-effective fault strength of a blind detachment beneath the Indo-Burmese Arc (NE-India) induced by frictional–viscous flow. Journal of Earth System Science, 131(1), 1-13
10. Kundu, B., **Panda, D.,** Vissa, N. K. and Tyagi, B. (2022). "Novel 2019 Coronavirus Outbreak" through the Eyes of GNSS Signal. Journal of the Geological Society of India, 98(1), 83-87
11. Sahoo, S., Tiwari, D. K., **Panda, D.** and Kundu, B. (2022). Eruption cycles of Mount Etna triggered by seasonal climatic rainfall. Journal of Geodynamics, 149, 101896
12. Sen, R., **Panda, D.** and Kundu, B. (2021). Crustal deformation, long-term plate motion and earthquake occurrence process of the Shan Plateau region, Northern Sunda Arc: constrains from geodetic measurements
13. Sahoo, S., Senapati, B., **Panda, D**., Tiwari, D.K., Santosh, M. and Kundu, B. (2021) Tidal triggering of micro-seismicity associated with caldera dynamics in the Juan de Fuca ridge. Journal of Volcanology and Geothermal Research 107319
14. **Panda, D**., Kundu, B., Gahalaut, V.K. and Rangin, C. (2020) India-Sunda Plate Motion, Crustal Deformation, and Seismic Hazard in the Indo-Burmese Arc. Tectonics, 39(8), e2019TC006034
15. Senapati, B., Huba, J.D., Kundu, B., Gahalaut, V.K., **Panda, D**., Mondal, S.K. and Catherine, J.K. (2020) Change in Total Electron Content During the 26 December 2019 Solar Eclipse: Constraints from GNSS Observations and Comparison with SAMI3 Model Results. Journal of Geophysical Research: Space Physics, 125(10), e2020JA028230
16. Kundu, B., Yadav, R.K., Bürgmann, R., Wang, K., **Panda, D**. and Gahalaut, V.K. (2020) Triggering relationships between magmatic and faulting processes in the May 2018

eruptive sequence at Kīlauea volcano, Hawaii. Geophysical Journal International, 222(1), 461-473

17. Kundu, B., Yadav, R.K., Gahalaut, V.K. and **Panda, D**. (2020) The January 23, 2018 M7. 9 Kodiak earthquake, Alaska: A consequence of slip partitioning in the outer rise region. Journal of Geodynamics, 101732
18. **Panda, D**., Kundu, B., Gahalaut, V.K., Bürgmann, R., Jha, B., Asaithambi, R., Yadav, R.K., Vissa, N.K. and Bansal, A.K. (2020) Reply to "A warning against over-interpretation of seasonal signals measured by the Global Navigation Satellite System". Nature Communications, 11(1), 1-2
19. **Panda, D**., Mondal, A. and Kundu, B. (2019) Eastward "glacier-like flow" of the Tibetan crust constrained from power-law rheology. Journal of Asian Earth Sciences, 177, 129-133
20. Kundu, B., Vissa, N.K., Gahalaut, K., Gahalaut, V.K., **Panda, D**. and Malik, K. (2019) Influence of anthropogenic groundwater pumping on the 2017 November 12 M 7.3 Iran–Iraq border earthquake. Geophysical Journal International, 218(2), 833-839
21. **Panda, D**., Senapati, B., Tyagi, B. and Kundu, B. (2019) Effects of Rayleigh-Taylor instability and ionospheric plasma bubbles on the global navigation satellite System signal. Journal of Asian Earth Sciences, 170, 225-233
22. **Panda, D**., Kundu, B., Gahalaut, V.K. and Rangin, C. (2018) Crustal deformation, spatial distribution of earthquakes and along strike segmentation of the Sagaing Fault, Myanmar. Journal of Asian Earth Sciences, 166, 89-94
23. **Panda, D**., Kundu, B., Gahalaut, V.K., Bürgmann, R., Jha, B., Asaithambi, R., Yadav, R.K., Vissa, N.K. and Bansal, A.K. (2018) Seasonal modulation of deep slow-slip and earthquakes on the Main Himalayan Thrust. Nature communications, 9(1), 4140
24. **Panda, D**., Kundu, B. and Santosh, M. (2018) Oblique convergence and strain partitioning in the outer deformation front of NE Himalaya. Scientific Reports, 8(1), 10564
25. Kundu, B., **Panda, D**., Gahalaut, V.K. (2018) Non-tectonic signals in tectonic geodesy Current Science, 115, 822-825
26. Kundu, B., **Panda, D**., Gahalaut, V.K. and Catherine, J.K. (2018) The 2017 August 21 American total solar eclipse through the eyes of GPS. Geophysical Journal International, 214(1), 651-655
27. Kundu, B., Vissa, N.K., **Panda, D**., Jha, B., Asaithambi, R., Tyagi, B. and Mukherjee, S. (2017) Influence of a meteorological cycle in mid-crustal seismicity of the Nepal Himalaya. Journal of Asian Earth Sciences, 146, 317-325

Book chapters

- **Panda, D**., Kundu, B. and Gahalaut, V.K. (2020) Earthquakes in the Himalaya. H. K. Gupta (ed.), Encyclopedia of Solid Earth Geophysics, Encyclopedia of Earth Sciences Series, https://doi.org/10.1007/978-3-030-10475-7_263-1
- Senapati, B., **Panda, D.,** Kundu, B. and Tyagi, B. (2022). Real-Time Detection of Tornado-Induced Ionospheric Disturbances by Stand-Alone GNSS Receiver. In Extreme Natural Events (pp. 199-220). Springer, Singapore

CONFERENCE PROCEEDINGS

- **Panda, D.** and Eric Ostrom Lindsey. (2023) Variation in interseismic plate coupling and long-term fault behavior along the Himalayan megathrust. AGU Fall Meeting, San Francisco, CA, United States of America
- **Panda, D**. Lindsey, E. O., Senapati, B. and Kundu, B. (2022) Interseismic shear stress caused by variable kinematic coupling along the megathrust plate interface. AGU Fall Meeting, Chicago, IL, United States of America
- **Panda, D**. and Kundu, B. (2019) Oblique convergence, strain partitioning and associated geodynamic complexities in NW and NE Himalaya. International Workshop on Climate Change and Extreme Events in the Himalayan Region. Indian Institute of Technology Mandi
- **Panda, D**. Kundu, B., Gahalaut, V.K., Bürgmann, R., Jha, B., Asaithambi, R., Yadav, R.K., Vissa, N.K. and Bansal, A.K. (2018) Seasonal modulation of deep slow slip and earthquakes on the Main Himalayan Thrust. AGU Fall Meeting, Washington D.C., United States of America
- **Panda, D**. Kundu, B., Gahalaut, V.K. and Rangin, C. (2018) Crustal deformation, earthquake occurrence process and along strike segmentation of Sagaing Fault, Myanmar. National Seminar on Dynamics of Surface and Sub-Surface Geological Processes, Pondicherry University

PUBLICATION CITATIONS

Google Scholar: https://scholar.google.co.in/citations?user=G8oJVzUAAAAJ&hl=en

ResearchGate: https://www.researchgate.net/profile/Dibyashakti_Panda

Total citations: 324, h-index: 12 (Google Scholar, August 2025).

OUTREACH ACTIVITIES

- **Research paper reviewed** in international journals (Tectonophysics; Frontiers in Earth Science; Geo-Marine Letters; Geosciences; Applied Sciences; Geomatics, Natural Hazards and Risk; Environmental Earth Sciences)
- 2024: Participated in **GAMIT/GLOBK** and track short course for **GNSS data processing** and analysis organized by **EarthScope and MIT**, July 22-26.
- 2022: Campaign GPS survey of monuments in **Valles Caldera**, New Mexico, in collaboration with **Los Alamos National Labs**
- Participated as a member of the scientific team to study **seafloor geodesy** in a fully funded week-long Apply-to-Sail program for the **2023 Near Trench Community Geodetic Experiment Cascadia Expedition**

ANALYTICAL / NUMERICAL SKILLS

- Processing raw GNSS data using GAMIT/GLOBK
- Blocks software to create a fault network by modeling the GNSS horizontal velocities.
- Inversion of horizontal velocities to estimate plate coupling
- InSAR data processing using the InSAR Scientific Computing Environment (ISCE) software
- MATLAB (Numerical analysis of Geodetic and Tidal stress time series; Periodicity analysis in time series; Euler pole estimation from geodetic observations, COULOMB package, downsampling of InSAR interferogram, 3D-mesh for subduction zones)
- LINUX
- Python (basic understanding and working)
- Analytical Code
- Graphical presentation (Grapher, Surfer, Global Mapper, 3DEM, GMT, CorelDraw)
- Regular office applications