

CURRICULUM VITAE

Name : **Dr. Neeraj Pant**
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Citations : 346
h-index : 8



RESEARCH INTEREST

Social Hydrology; Hydrogeology; Hydrological investigations; Isotope-hydrology; Climate Change; Geophysical Investigations; Hydro-Geochemistry; Glaciology; Water resource management; Sustainability Sciences

BIOSKETCH

EDUCATION

2021- 2025 2nd PhD at Western Sydney University, Sydney, Australia (Rejuvenation of the springs in the Himalayan region: Evaluation of Options and Strategies; Submitted in Dec 2025)
2017-2023 1st PhD from IIT(ISM) Dhanbad; (Morphotectonics and water source attributes of Alaknanda River in and around Vishnuprayag, Garhwal Himalaya, India)
2011-13 Master's (M.Sc.) in Geology, Bundelkhand University, Jhansi, Uttar Pradesh
2008-11 Bachelors (B.Sc.) in Geology and Physics, JNPG College, Lucknow University, Lucknow, Uttar Pradesh
2008-10 NCC "C" Certificate, 67 UP Battalion Lucknow (UPSD/08/234666)

HONORS AND GRANT RECEIVED

1. Nominated as **2024** NSW (New South Wales) International Education Awards, through Western Sydney University, Australia.
2. Winner of **2024** Western Sydney University Vice-chancellor award for **Excellence in Community Engagement**; prize money \$4000.
3. Australia -India joint fellowship under SPARC (Scheme for Scheme for Promotion of Academic and Research Collaboration); \$125,000.
4. Graduate Research School Sustainable Development Goals Project (SDGs) Allowance Grants 2023, from Western Sydney University, Sydney; \$20,000.
5. Gold medalist **2013** in M.Sc. geology, Bundelkhand University, Jhansi, Uttar Pradesh

WORK/RESEARCH EXPERIENCE

- Worked as a Higher degree research scholar (2nd PhD) at Western Sydney University in a project entitled "Rejuvenation of drying spring: evaluation of options and strategies" from June 2021 till present, funded under "Scheme for Promotion of Academic and Research Collaboration (SPARC).

Basic objectives and responsibilities are:

- To understand the impact of climate change, land use-landcover changes and geology over the groundwater recharge and spring discharge in the study area.
 - To plan and develop strategies and policies for the sustainable management of springs and groundwater resources.
 - To monitor selected recharge interventions under different field conditions and evaluate their performance after the rejuvenation.
 - Engaging the local community in the development of village-level water conservation model.
- **Senior Research Fellow (SRF)** (1st PhD) on the project "Understanding of Hydrological Processes in Upper Ganga Basin using Isotopic Techniques" under the Department of Science and Technology (DST) funded NMSHE from 22nd June 2016 – Dec 2020 at National Institute of Hydrology, Roorkee, India.

Basic responsibilities were:

- Field work for Sample collection for Isotopic Characterization of Precipitation, River waters, snow/Ice in Ganga basin from higher Himalayan Glaciers up to Rishikesh.
 - Run-off analysis in the headwater region of Ganga using Isotopic modelling.
 - Spatial and temporal variation of snow and Glacier melt in Ganga and its major tributaries.
 - Modelling for estimation of Residence and Transit time of groundwater using Tritium (H^3) and O^{18} isotopic techniques.
 - Radon -222 analysis.
- **Junior Research Fellow (JRF):** 14 July 2015 to 15 April 2016 in the project entitled 'Hydro-geological and Isotopic Investigation of District Lalitpur and Jhansi of Bundelkhand region' at National Institute of Hydrology, Roorkee India. Basic responsibilities were:
 - Carried out fieldwork at Bundelkhand region of Uttar Pradesh State, involving site selection and sampling of groundwater and surface water for Isotopic, Water quality, Bacteriological and Pesticide studies.
 - Carried out Hydrological Conductivity test using Double Ring Infiltration/Mini Disk Infiltrimeter and Percolation test.
 - Slug test and Hydraulic Conductivity calculation using Pro-Aquifer Test Software.

RESEARCH PAPER PUBLISHED IN INTERNATIONAL & NATIONAL JOURNALS

1. **Pant, N.**, Hagare, D., Maheshwari, B., Rai, S.P., Patel, A., Puthiyottil, N., Jain, S.K., Sahu, L.N., Sen, S. and Upadhyay, M., 2026. Understanding the influence of landcover on spring dynamics and evaporation in the Himalayan region, using stable isotope and discharge. *Science of the Total Environment*, 1012, p.181215.
2. Puthiyottil, N., **Pant, N.**, Noble, J., Patel, A., Singh, A.K., Akpataku, K.V., Rai, S.P., Rai, N., Hagare, D. and Soman, M., 2025. Assessment of spring water vulnerability and hydrogeochemical evolution in the Khulgad micro watershed of Kosi basin, Kumaun Lesser Himalaya, India. *Hydrological Sciences Journal*. <https://doi.org/10.1080/02626667.2025.2520986>
3. **Neeraj Pant**, Dharma Hagare, Basant Maheshwari, Shive Prakash Rai, Megha Sharma, Jen Dollin, Vaibhav Bhamoriya, Nijesh Puthiyottil, Jyothi Prasad; Rejuvenation of the Springs in the Hindu Kush Himalayas through Transdisciplinary Approaches - A Review; *Water* 2024; 16, 3675. <https://doi.org/10.3390/w16243675>
4. Suman, S., Rawat, A., Kumar, A. and **Pant, N.**, 2024. Study of Training Parameters Effect in Noise Clustering Classifier for Handling Heterogeneity Within the Class for LULC Classification. *Journal of the Indian Society of Remote Sensing*, pp.1-14.
5. Patel, A., Rai, S.P., Akpataku, K.V., Puthiyottil, N., Singh, A.K., **Pant, N.**, Singh, R., Rai, P. and Noble, J., 2023. Hydrogeochemical characterization of groundwater in the shallow aquifer system of Middle Ganga Basin, India. *Groundwater for Sustainable Development*, 21, p.100934.
6. Hagare, D., Ezemba, S.N., **Pant, N.**, Rahman, M.M., Maheshwari, B. and Siddiqui, Z., 2022. Assessment of Urban Land Use and Cover on Groundwater Recharge and Quality. *Civil Eng*, 3(2), pp.480-502.
7. Mostapa, R., Samuding, K., Daung, J.A.D., Hashim, M.M.M. and **Pant, N.**, 2022. Assessment of Groundwater Recharge Sources and Their Dynamics Using Environmental Isotope and Hydrochemical Approaches In Coastal Aquifers of Peninsular Malaysia. *ASM Science Journal*, 17, pp.1-15.
8. Kumar, S., Kumar, V., Saini, R.K., **Pant, N.**, Singh, R., Singh, A., Kumar, S., Singh, S., Yadav, B.K., Krishan, G. and Raj, A., 2021. Floodplains landforms, clay deposition and irrigation return flow govern arsenic occurrence, prevalence and mobilization: A geochemical and isotopic study of the mid-Gangetic floodplains. *Environmental Research*, 201, p.111516.
9. **Pant, N.**, Rai, S.P., Singh, R., Kumar, S., Saini, R.K., Purushothaman, P., Nijesh, P., Rawat, Y.S., Sharma, M. and Pratap, K., 2021. Impact of geology and anthropogenic activities over the water quality with emphasis on fluoride in water-scarce Lalitpur district of Bundelkhand region, India. *Chemosphere*, 279, p.130496.
10. Kumar, S., Joshi, S.K., **Pant, N.**, Singh, S., Chakravorty, B., Saini, R.K., Kumar, V., Singh, A., Ghosh, N.C., Mukherjee, A. and Rai, P., 2021. Hydrogeochemical evolution and groundwater recharge processes in arsenic enriched area in central Gangetic plain, India. *Applied Geochemistry*, 131, p.105044.

11. Kumar, S.; Kumar, M.; Chandola, V.K.; Kumar, V.; Saini, R.K.; **Pant, N.**; Kumari, N.; Srivastava, A.; Singh, S.; Singh, R.; et al. Groundwater Quality Issues and Challenges for Drinking and Irrigation Uses in Central Ganga Basin Dominated with Rice-Wheat Cropping System. *Water* 2021, 13, 2344. <https://doi.org/10.3390/w13172344>
12. **Pant, N.**, Semwal, P., Khobragade, S.D., Rai, S.P., Kumar, S., Dubey, R.K., Noble, J., Joshi, S.K., Rawat, Y.S., Nainwal, H.C. and Shah, S., 2021. Tracing the isotopic signatures of cryospheric water and establishing the altitude effect in Central Himalayas: A tool for cryospheric water partitioning. *Journal of Hydrology*, 595, p.125983.
13. Akhtar, N., Syakir, M.I., Saini, R., **Pant, N.**, Ahmad, S., Almanasir, Y.K.A., Anees, M.T. and Qadir, A., 2020. Statistical technique evaluates the levels of heavy metal in groundwater across the Jhansi district, Bundelkhand area, India. *Warta Geologi*, 47(1).
14. **Pant, N.**, Dubey, R.K., Bhatt, A., Rai, S.P., Semwal, P. and Mishra, S., 2020. Soil erosion and flood hazard zonation using morphometric and morphotectonic parameters in Upper Alaknanda River basin. *Natural Hazards*, 103, pp.3263-3301.
15. Akhtar, N., Syakir, M.I., Rai, S.P., Saini, R., **Pant, N.**, Anees, M.T., Qadir, A. and Khan, U., 2020. Multivariate investigation of heavy metals in the groundwater for irrigation and drinking in Garautha Tehsil, Jhansi District, India. *Analytical Letters*, 53(5), pp.774-794.
16. Rai, S.P., Singh, D., Saini, R., Rathore, D.S., Kumar, S., Jain, S.K. and **Pant, N.**, 2019. Possibility of hydrological connectivity between Manasarovar Lake and Gangotri Glacier. *Current Science*, 116(7), pp.1062-1067.

RESEARCH PAPER UNDER REVIEW / COMMUNICATION

1. **Neeraj Pant**; Basant Maheshwari; Megha Sharma; Shive Prakash Rai; Jen Dollin; Abhinav Patel; Nijesh Puthiyotttil; Vaibhav Bhamoriya; Sharad Kumar Jain; Integrating Transdisciplinary Social-hydrology and Value Addition for Sustainable Spring-fed Water Management in the Anthropocene: Insights from the Central Himalaya; *Journal: Environmental Development*; **ENVDEV-D-25-03159**
2. Puthiyotttil Nijesh, Radha Dixit, Abhinav Patel, Abhinesh Kumar Singh, Anant Gautam, Raju Rai, Sury Kant Singh, **Neeraj Pant**, Meera Soman, Shive Prakash Rai. Groundwater potential zone mapping to understand the sustainability of springs in a micro watershed of Kosi River, Kumaun Lesser Himalaya, Uttarakhand, India; *Journal: Sustainability*, DOI:10.20944/preprints202406.1256.v1
3. Rajeev saran Ahluwalia; Rajeev S. Ahluwalia; S. P. Rai; Jacob Noble; S. K. Jain; Prikash N. Meetei; **Neeraj Pant**; Susheel Kumar; Anil Tiwari 2024; Runoff dynamics in the Snowy Headwaters of Indus Basin, Western Himalayas, India; **Earth Systems and Environment**; EMID:9051543f728950de

BOOK CHAPTER PUBLISHED

1. Semwal, P., Khobragade, S.D. and **Pant, N.**, 2023. Evolution of Soil Erosion and Sedimentation Vulnerability of Western Himalayan Lake Sukhna, India. *Weathering and Erosion Processes in the Natural Environment*, pp.125-144, DOI: 10.1002/9781394157365.ch6

PAPER PRESENTED IN INTERNATIONAL & NATIONAL CONFERENCES

1. Rai S. P., Kumar B., Kumar S., Singh D., Verma S. K., Arora M., Rawat Y. S., **Pant Neeraj**. and Pandey N.G. 2017. Stable Isotope Schematics of Ganga River and its tributaries. International Conference on the Status and Future of the World's Large River. April 18-21, 2017, New Delhi
2. **Pant Neeraj**, Rai S.P., Saini K. R., Singh Rajesh, Kumar Manish, Mishra Sumit, "Evaluation of Hydrogeochemistry and Groundwater Quality in Lalitpur District, Bundelkhand Region, Uttar Pradesh, India". Presented in 7th International Groundwater conference (IGWC) on groundwater vision 2030 "WATER SECURITY, CHALLENGES & CLIMATE CHANGE ADAPTATION" 11th -13th Dec 2017 New Delhi
3. Rai S. P., **Pant Neeraj**, Rawat Y D, Saini K.R., Rai Dinesh. "Isotopic characterization and Identification of source of Groundwater of Bazada region in Tapi Alluvium basin district Jalgaon, Maharashtra" Presented in 7th International Groundwater Conference (IGWC) on groundwater vision 2030 "WATER SECURITY, CHALLENGES & CLIMATE CHANGE ADAPTATION" 11th -13th Dec 2017 New Delhi

4. **Pant Neeraj** et al. "Modelling the residence time of water in Upper Ganga basin (3H), Western Himalayas, India". Submitted to EGU General Assembly 2018, in Session HS2.3.9 – Measuring and modelling surface water – groundwater interactions.
5. R.K. Dubey, Gyan Prakash Satyam and **Neeraj Pant**, "Fluctuating ice cover of glacier in parts of Kumaon-Garhwal Himalaya, India: an indicator of climate change" Presented in National conference in BCCC 2018 10-11 August GJLT, IIT(ISM) Dhanbad
6. **Pant Neeraj** et al. "Snout water isotopic characteristics ($\delta^{18}\text{O}$, $\delta^2\text{H}$ and 3H) of Satopanth glacier, western Himalayas, India". Submitted to AGU, General Assembly (Washington), 10-14 Dec 2018, accepted in Session PP045 – Water Isotope Systematics: Improving Modern and Paleoclimate Interpretations.
7. D. Singh, S. P. Rai, S. Kumar, M. Arora, **Pant Neeraj**, S.K. Swain, R.S. Ahluwalia and H.N. Nainwal "Inferences derived from isotopic characterization of river water (Bhagirathi River) sampled near snout of Gangotri Glacier in Western Himalaya". International conference on "Water Resources: Innovations in Quality and Quantity, Sustainable Development and Challenges " (ICWR- 2018) 15th -17th March 2018, University of Kerala.
8. Joshi, S., Khobragade, S., Kumar, S., **Pant, N.**, Arora, M., Negi, D. 2020. Variability in snow/ice melt contribution to river discharge near snout of Gangotri glacier in Bhagirathi basin in Garhwal Himalaya. International Conference on Himalayan Cryosphere-2020, at: IISC Bangalore, India.
9. Abhinav Patel, Shive Prakash Rai, Rajesh Singh, Nijesh Puthiyottil, **Neeraj Pant**, 2024. Hydrochemical attributes and Fluoride release in multi-tier aquifer system of densely populated region in the Central Ganga Plain, India; Goldschmidt Conference 2024.

TRAINING PROGRAMMES/WORKSHOP ATTENDED

1. "Recharge Process of Springs and Its Management to Mitigate Anthropogenic and Climate Change Impact for Water Security: A case study in part of Kumaun Lesser Himalaya, India". Workshop under SPARC (MHRD), January 2020 at GBPUAT, Pantnagar, Uttarakhand.
2. Application of Isotopes in Hydrology & Water Resources, 29th February- 04 March, 2016, Hydrological Investigation Division, National Institute of Hydrology, Roorkee.
3. Training course on Glacier and water Resource Management, Under GIAN (Global Initiative on Academic Network) organized by Jawaharlal Nehru University, New Delhi from 25th July to 31st July 2016.

SOFTWARE SKILLS

- **Software Packages** : Arc-GIS, Surfer, SPSS, NVivo
- **Models** : Pro-Aquifer Test, Aqua Chem, TRACER LPM, RES2DINV

INSTRUMENTS HANDLED

DI-IRMS; CF-IRMS; Ion chromatograph; VES (Geophysical Survey); Hydrological Investigations (Pump test, slug test, infiltration test)

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- Member of Australia India Water Centre (AIWC)

PROFESSIONAL REFERENCES

- **Prof. Dharma Hagare**, Professor, School of Engineering, Design and Built Environment Western Sydney University, Australia, D.Hagare@westernsydney.edu.au
- **Distinguished Prof. Basant Maheshwari**, Distinguished Professor, School of Water, Environment & Sustainability Western Sydney University, Australia, B.Maheshwari@westernsydney.edu.au
- **Prof. S.P. Rai**, Banaras Hindu University, Varanasi; Ex-Scientist-F, Hydrological Investigation Division, National Institute of Hydrology, Roorkee, India. Phone: +91-9411100367; sprai1966roorkee@gmail.com
- **Ms. Jen Dolin**, Director, Sustainability Education and Partnerships, Western Sydney University, Australia, J.Dollin@westernsydney.edu.au