

Curriculum Vitae

Pushpendra Pandey

Senior Research Fellow

Birbal Sahni Institute of Palaeosciences, Lucknow - 226007, India

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Education

- **Doctor of Philosophy (Ph.D.) in Climate Science**
 - *Birbal Sahni Institute of Palaeosciences, Lucknow*
 - *Apr 2022 - Present*
 - *Title: Dynamics of Tree Growth Responses and Climatic Changes in the Western Himalaya using Tree-rings*
 - *Supervisor: Dr Parminder Singh Ranhotra, Co-Supervisor: Dr Mayank Shekhar*
- **Master of Arts in Geography**
 - *University of Lucknow, Lucknow, India*
 - *2018 - 2020 (First Class)*
 - *Master's Dissertation, BSIP Lucknow.*
 - *Feb 2020 - Oct 2020*
 - *Thesis topic: Characterization of Downscaled Past Climate Data and Extreme Event Analysis of Uttarakhand and Himachal Pradesh*
 - *Principal Investigator: Dr. Parminder Singh Ranhotra, Scientist-D, BSIP*
- **Bachelor of Technology in Information Technology**
 - *Pondicherry University, Puducherry, India*
 - *2008-2012 (First Class)*

Work Experience

- *Field expedition Tree-ring sample collection from Kashmir, Lahaul & Spiti, and Tungnath in Western Himalaya.*
- *Chronology Development for species like Cederus Deodara, Pinus Wallichiana, Betula Utilis, and Abies Pindrow.*
- *Analyzed CMIP5 model ensembles for Past and future projections for the Asian Summer Monsoon.*
- *Worked with CORDEX on full RCP 4.5 and RCP 8.5 scenarios climate model ensembles.*
- *Worked on the Variable Infiltration Capacity Model (VIC Model) for water balance in the Upper Alaknanda Basin.*
- *Experience with Reduced Gravity Model and Mellor Yamada Level 2 Turbulent Closure Model.*
- *Utilized CRU TS dataset for the Western Himalayan Region to reconstruct centennial climatic extreme events.*
- *Associate Engineer, Tech Mahindra, 2013*

Workshop and Training

- *School on High Performance Computing at the Inter-University Accelerator Centre, New Delhi.*
- *Data Assimilation for Weather and Climate Models at the International Centre for Theoretical Sciences, Tata Institute of Fundamental Research, Bengaluru, May 2024.*
- *Weather Research Forecast Tutorial Training - NCAR, Jan 2024*
- *Remote Sensing and GIS Training - Geological Survey of India Training Institute, Hyderabad (Jan - Feb 2023)*
- *Training Programme on Role of Remote Sensing & GIS in Natural Resources Management, RSAC Lucknow, 2019*
- *Workshop on The Role of Geospatial Technology in Water Resource Management, University of Lucknow, 2019*

Programming Languages

- Python
- R
- Matlab

Publications

- Jain S., Chinthala B.D., Ranhotra P.S., Pandey P., Shekhar M, Griesinger J., Joshi R., Hamid M., Dar F.A., Shafee F., Khuroo A.A., Singh C.P., Bajpai R., Brauning A. Forest-Stand Structure and Treeline Dynamics of Himalayan Fir over the Last Four Centuries in Kashmir, western Himalaya, *Dendrochronologia*, 126442.
- Lal, D., Pandey, P., Shekhar, M., Chand, P., Dhyani, R., Ahmed, I., ... & Ranhotra, P. S. Tree-Ring-Based Drought Reconstruction Reveals Increased Pre-Monsoon Droughts Over the Past Two Centuries in the Lug Valley Kullu, Northwest Himalayas. *International Journal of Climatology*, e70104.
- Shekhar, M., Pandey, P., Shaktiman Singh, Sharma, A. Monsoon dynamics and future projections in the Himalaya: Insights into sea surface temperature, sea level pressure relationships, and future flood risks. *Dynamics of Atmospheres and Oceans*.
- Shekhar, M., Sharma, A., Pandey, P., Sharma, A., & Dimri, A. P. (2024). Assessing the past and future dynamics of the Asian summer monsoon: Insights from palaeomonsoon synthesis and CMIP6 data. *Global Environmental Change Advances*, 2, 100004.
- Chinthala, B. D., Singh, A., Shekhar, M., Tomar, N., Phulara, M., Yadav, A., ... & Singh, C. P. (2023). Age-Girth Stand Structure of Himalayan Fir and Growth-NDVI Relationship in the Treeline Transects of Western Himalaya: An Ecological Perspective. In *Ecology of Himalayan Treeline Ecotone* (pp. 455-481). Singapore: Springer Nature Singapore.

Publications under review:

- Pandey P., Ashfaq M., Devilal, Shekhar, M., Singh B.B., Ranhotra P.S., Chand P., Bhattacharyya A. Tree-ring evidence marks year 2022 with driest spring season during last four centuries in the Western Himalayas.

- Nag D., Verma S., Phartiyal B., Pandey P., Agrawal S., Kumar P., Sharma R. Early Holocene Latitudinal Variations in Monsoon-Westerly dynamics: Evidence from the Northwest Himalaya with Global Implications

Societies and Memberships

- Member of the American Geophysical Union
- Member of the American Meteorological Society
- Member of the European Geosciences Union

Achievements

- *All India Rank 5 (99.99 percentile) in UGC NET exam, June 2019*
- *Qualified for UGC NET (Lectureship) in Dec 2018.*

Teaching Experiences

- *Instructor: Dendrochronology, multivariate statistics, and Python for numerical computations, 2023 (Fall)*
- *Teaching Assistant: Solid Earth, 2022 (Spring)*
- *Teaching Assistant: Climate Science, 2021 (Fall)*
- *Teaching Assistant: Climatology and Geomorphology 2019 (Fall)*

Additional Skills

- *Led a team of volunteers in coordinating travel arrangements, managing logistics, and ensuring the smooth execution of activities for the High-End Workshop on 'Disaster and Climate-Resilient Pathways' at the Birbal Sahni Institute of Palaeosciences.*

Date: 6th Nov 2025
Place: BSIP Lucknow



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