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Research Interests

Urban Hydro Climatology; Urban Heat Island and Microclimate Dynamics; Climate Change Adaptation and Resilient Cities; Geospatial Analytics and Machine Learning for Environment

Education

Ph.D. (Hydrology)	Indian Institute of Technology Roorkee, India	
	<i>Dissertation: 'Impact of Urban Heat Islands on Microclimate of a Sub-Tropical City'</i>	2025
M.Tech. (Water Resources)	Delhi Technological University, India	2017
B.Tech. (Civil Engineering)	Uttar Pradesh Technical University (UPTU), Lucknow, India	2014

Professional Experience

- Post Doctoral Experience: Post Doctoral Fellow at the Technion-Israel Institute of Technology, Israel (January 2026-Present)**
- Post Doctoral Experience:** Project Fellow, Indian Institute of Technology Roorkee, India (Apr 2025 – Nov 2025) on Project: *Comprehensive Stormwater Management Plan for Bhubaneswar City, Odisha*, sponsored by Bhubaneswar Municipal Corporation (BMC), Odisha, India
- Visiting Postgraduate Scholar** - University of Bath, England, U.K., Global Research Collaborative Grant by British Council [June- September 2022]
- Teaching at University Level:** Assistant Professor (Civil Engineering), College of Engineering Roorkee, Roorkee: [February 2018–December 2018]
Key responsibilities: Delivered lectures on Engineering Hydrology, Hydropower Engineering, and Environmental Engineering to over 150 students. Organised seminars and workshops to enhance student education, promote professional growth, and encourage industry collaboration.

Honours and Awards

- Seal of Excellence** -The Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowship-2026

- **Lady Davis Post-Doctoral Fellowship** at the Technion-Israel Institute of Technology, Haifa, Israel- 2026
- Helmholtz Centre for Environmental Research – UFZ, Germany Workshop Grant | 2025
- Global Land Programme (GLP) travel grant to attend 5th Open Science Meeting in Oaxaca, Mexico |2024
- American Geophysical Union (AGU) 2023 Student Travel Grant | 2023
- DST-SERB International Travel Grant (ITS) Scheme | 2023
- University Grants Commission (UGC) Travel Grant | 2023.
- Sivapalan Young Scientist Travel Award (SYSTA) | 2023
- IEEE GRSS IDEA Professional Development Microgrants | 2023
- Global Research Collaborative Grant by British Council | 2022
- Best E-Poster Recipient at Research Scholar Day, IIT-Roorkee | 2021
- Team Lead and Winner of All-India GIS Mapping Competition "MAPATHON 2020" | 2021
- Best Paper Award at Third International Conference on Trends and Recent Advances in Civil Engineering (TRACE) | 2020
- Ministry of Education Fellowship, Government of India (GoI) for Postgraduate and Doctoral Programmes | 2015 and 2019

Peer-reviewed Journal Publications

1. **Mishra, A***, & Arya, D. S. (2023). Assessment of land-use land-cover dynamics and urban heat island effect of Dehradun city, North India: a remote sensing approach. *Environment, Development and Sustainability*, 26(9), 22421–22447. <https://doi.org/10.1007/s10668-023-03558-6>
2. **Mishra, A***, & Arya, D. S. (2024). Land Surface Temperature Dynamics during COVID-19 Lockdown in Diverse Climatic and Physiographic Zones—A Study of Indian Mega Cities. *Transactions in GIS*, 28(7), 2295–2308. <https://doi.org/10.1111/tgis.13237>
3. Pushkar, D. S., **Mishra, A***, Arya, D. S., Jaiswal, S., & Kumar, A. (2025). Investigating the effects of land use , land cover change , and urban heat island effects in Agra city , India , using a remote sensing approach. *Discover Cities* **2**, 105 (2025) <https://doi.org/10.1007/s44327-025-00149-0>
4. Jubaed, A., & **Mishra, A.** (2025). Analysing Land Use and Land Cover Dynamics (1972 – 2020) and Evaluating Drainage System Efficacy : A Case Study of Bangladesh Polders . 1–24. <http://doi.org/10.1002/ird.3072>
5. Ahmad, E, Al-Dousari, **Mishra, A.**, & Singh, S. (2023). Land use land cover change detection and urban sprawl prediction for Kuwait metropolitan region using multi-layer perceptron neural networks (MLPNN). *The Egyptian Journal of Remote Sensing & Space Sciences (EJRS)*, Elsevier. <https://doi.org/10.1016/j.ejrs.2023.05.003>
6. Leal Filho, W., Dibbern, T. A., Pimenta, M. A., Cristofolletti, E., Mbah, M., **Mishra, A.**, Clarke, A., Samuel, N., Apraiz, J. C., Abubakar, I. R., & Aina, Y. A. (2024). The added value of partnerships in implementing the UN Sustainable Development Goals. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2024.140794>

7. Leal Filho, W., Mbah, M. F., Dinis, M. A. P., Trevisan, L. V., Lange, D. de, **Mishra, A.**, Rebelatto, B., Hassen, T. Ben, & Aina, Y. A. (2024). The role of artificial intelligence in the implementation of the UN Sustainable Development Goal 11: Fostering sustainable cities and communities. *Cities*, 150(April), 1–16. <https://doi.org/10.1016/j.cities.2024.105021>
8. Arheimer, B., Cudennec, C., Castellarin, A., Grimaldi, S., Heal, K. V., Lupton, C., ... **Mishra, A.** (2024). The IAHS Science for Solutions decade with Hydrology Engaging Local People IN a Global world (HELPING). *Hydrological Sciences Journal*. <https://doi.org/10.1080/02626667.2024.2355202>
9. Orieschnig, C., Adla, S., Chun, K. P., Srivastava, S., Morovati, K., Howard, B. C., Octavianti, T., Uchôa, J. G., Duan, Z., Mazzoglio, P., Panchanathan, A., Koren, G., Papacharalampous, G. A., Pradhananga, D., Soulis, K., Choukrani, H., Dakhlaoui, H., Elçi, A., Fan, X., ... Lakhwan, N. (2026). Effective science communication in the face of water crises: a community perspective on challenges and best practice in HELPING. *Hydrological Sciences Journal*, 1–18. <https://doi.org/10.1080/02626667.2026.2625282>

Conferences /Proceedings/ Book Chapters

1. **Mishra, A.**, & Arya, D. S. (2024). 'GeoAI and Urban Dynamics: Assessing Urban Growth Patterns in India's Megacities', Global Land Programme (GLP) 5th Open Science Meeting (OSM), Oaxaca, Mexico
2. Mishra, A., & Arya, D. S. (2023). Assessment of diurnal urban heat island (UHI) intensity in microclimatic urban environment using Local climate zone classification approach - AGU23 Fall Meeting. (<https://doi.org/10.22541/essoar.170365197.74411468/v1>)
3. Arya, D. S., Jubaed, M. A., & Mishra, A. (2023). Assessment of impact of changing land use and land cover dynamics and waterlogging in Southwest Polders of Bangladesh – AGU Fall Meeting 2023.
4. Mishra, A., & Arya, D. S. (2023). A machine learning-based comparative analysis of meteorological indicators within a heterogeneous urban microclimate – XXVIII General Assembly of the International Union of Geodesy and Geophysics (IUGG) (Berlin) (<https://doi.org/10.57757/IUGG23-1062>)
5. Mishra, A., & Arya, D. S. (2022). Comparative assessment between the satellite land surface temperature and observed air temperature: A case study of Dehradun city, India – AGU Fall Meeting 2022.
6. Mishra, A., & Arya, D. S. (2021). Evaluation of Urban Heat Island Effects and Ecological Comfort of a Himalayan District in India – AGU Fall Meeting 2021.
7. Mishra, A., & Arya, D. S. (2020). Development of Decision Support System (DSS) for Urban flood management: A review of methodologies and results – Proceedings of World Environmental and Water Resources Congress 2020 (ASCE) (<https://ascelibrary.org/doi/10.1061/9780784482988.007>)

Research and Consultancy Projects Experience

- **Impact of Climate Change on Urban Heat Island and Urban Microclimate**
 - Sponsored by the Department of Science and Technology (DST), Government of India.
- **Remote Sensing-GIS Course Module Development**

- Funded by the World Meteorological Organisation (WMO)
- **Landslide Susceptibility Mapping**
 - Consultancy project for an insurance firm, focusing on Uttarakhand and Himachal Pradesh, India.
- **Hydrological Study for the proposed Rail-fed depot of HPCL at UNA, Himachal Pradesh**

Journal Reviewer

- **Environment, Development and Sustainability** – Springer Nature
- **Geocarto International** – Taylor & Francis
- **International Journal of Digital Earth** – Taylor & Francis
- **Journal of Cleaner Production** – Elsevier
- **Sustainable Cities and Society** – Elsevier

Memberships and Affiliations

- Associate Member, Association of Civil Engineering (ASCE), USA
- Member, International Association for Urban Climate (IAUC) (2023-2026)
- General Member, Future Earth, European Space Agency (ESA)
- Member, International Society for Photogrammetry and Remote Sensing (ISPRS)
- Member, Working Group, International Association of Hydrological Sciences (IAHS)
- Committee Member, Inspire, Develop, Empower, and Advance (IDEA), GRSS
- Technical Member, Earth Science Informatics (ESI) Technical Committee, IEEE
- Member, Indo-UK Water Centre (IUWC)

Technical Abilities and Soft Skills

- **GIS and Remote Sensing:** ArcGIS, QGIS, ERDAS Imagine, GRSS GIS
- **Statistical Modelling:** Minitab, Python:
- **Programming Abilities:** Python, Google Earth Engine (GEE):