Dr. Pramod Soni, Ph.D.

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Employment History

April 2023 – Present	**Assistant Professor,** IIT (BHU) Varanasi, India. Department of Civil Engineering.
Sep 2022 – April 2023	**Assistant Professor,** NIT Jamshedpur, India. Department of Civil Engineering.
June 2019 – Sep 2022	**Assistant Professor,** MNNIT Allahabad, Prayagraj, India. Department of Civil Engineering.
January 2018 – June 2019	**Assistant Professor,** M.B.M. Engineering College, Jodhpur, India. TEQIP-III project funded by the World Bank.
September 2011 – May 2012	**DAAD Fellow** KIT-IMK-IFU, Garmisch, Germany. DAAD Exchange student during M.Tech.

Education

June 2012 – August 2018	**Ph.D.,** Indian Institute of Technology, Kanpur, India. Hydraulics and Water Resources Engineering, Civil Engineering. Thesis
June 2010 – June 2012	**M.Tech.,** Indian Institute of Technology, Kanpur, India. Hydraulics and Water Resources Engineering, Civil Engineering.
June 2006 – June 2010	**B.E.,** M.B.M. Engineering College, JNVU, Jodhpur, India. Civil Engineering.
June 2003 – June 2005	**Sr. Secondary** Mahatma Gandhi Sr. Secondary School, Jodhpur RBSE, Ajmer.
June 2001 – June 2003	**Secondary** Bal Niketan, Jodhpur, RBSE, Ajmer.

Research Projects

- **Development of a Climate Resilient River Basin Management Plan for the Barak River Basin based on EU Framework and Indian Experience, GIZ**
- **Decision Support System for Water Resource Management, SLCR, Namami Gange** (Rs. 4.35 Crores)
- **Establishment of Secretariat for Smart Laboratory on Clean Rivers (SLCR) in Varanasi, Namami Gange** (Rs. 15.4 Crores)
- **Regionalization of Hydrological model parameters for Indian rivers by AICTE CRS Project** (Rs. 9 Lacs/-)
- **Use of Artificial Neural Network in regionalization of SWAT parameters, TEQIP** (Rs. 1.5 Lacs/-)
- **Mapping ground water quality Depleted area, Potential Groundwater Recharge Zones and Exploring the Farmer's need based Groundwater Recharge structures in District Mahoba of Bundelkhand region of UP, Department of Science and Technology** (Rs. 15 Lacs)

Research Publications

Journal Articles

1. S. Maurya and **P. Soni**, "Comparative assessment of wrf-simulated raindrop size distribution using disdrometer observations in varanasi," *Theoretical and Applied Climatology*, vol. 157, p. 179, 2026. DOI: 10.1007/s00704-026-06134-w

2. M. Kumar, **P. Soni**, and D. Swargiary, "Monitoring terrestrial water storage using grace/grace-fo data over india: A review," *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, vol. 49, no. 3, pp. 2225–2239, 2025.

3. R. R. Meena, R. M. Singh, and P. Soni, "Intensification of fluoride removal using electrocoagulation reactor with rotating fins and rings electrodes (aluminium and iron) in different configurations," *Chemical Engineering and Processing - Process Intensification*, 2025.

4. H. Prakash, K. K. Pandey, and **P. Soni**, "Peak discharge estimation for ungauged basins: A review," *Journal of Water and Climate Change*, vol. 16, no. 11, pp. 3483–3507, 2025.

5. H. Prakash, **P. Soni**, and K. K. Pandey, "Assessing drought trends and prediction using gcms: A case study of south bihar," *MAUSAM*, 2025.

6. R. Kumar, S. Gaur, **P. Soni**, P. Maurya, and A. Ohri, "Hru-based downscaling of grace-tws to quantify the hydrogeological fluxes and specific yield in the lower middle ganga basin," *Journal of Hydrology*, vol. 639, p. 131 591, 2024.

7. R. R. Meena, R. M. Singh, **P. Soni**, R. Kumar, and S. Kumar, "Fluoride removal using a rotating anode electro-coagulation reactor: Parametric optimization using response surface methodology, isotherms and kinetic studies, economic analysis and sludge characterization," *Journal of Environmental Management*, vol. 370, p. 122 600, 2024.

8. **P. Soni**, "The impact of data uncertainty on identifying precipitation trends in india," *MAUSAM*, vol. 75, no. 3, pp. 895–904, 2024.

9. R. R. Meena, S. Kumar, and **P. Soni**, "Hydrodynamic simulation and analysis using computational fluid dynamics: Electrochemical reactors and redox flow batteries," *ChemBioEng Reviews*, vol. 10, no. 5, pp. 670–683, 2023.

10. R. R. Meena, S. Kumar, and **P. Soni**, "Review on hydrodynamic simulation and analysis using cfd: Electrochemical reactors and redox flow batteries," *ChemBioEng Reviews*, 2023.

11. V. K. Singh, H. K. Pandey, S. K. Singh, and **P. Soni**, "Groundwater analysis using gravity recovery, climate experiment and google earth engine: Bundelkhand region, india," *Physics and Chemistry of the Earth, Parts A/B/C*, vol. 130, p. 103 401, 2023.

12. P. Dhanai, V. P. Singh, and **P. Soni**, "Rainfall triggered slope instability analysis with changing climate," *Indian Geotechnical Journal*, vol. 52, no. 2, pp. 477–492, 2022.

13 P. Kumar, R. C. Vaishya, **P. Soni**, and H. Medhi, "A methodological comparison on spatiotemporal prediction of criteria air pollutant," *Asian Journal of Atmospheric Environment*, 2022.

14 P. Singh, R. C. Vaishya, **P. Soni**, and H. Medhi, "A methodological comparison on spatiotemporal prediction of criteria air pollutants," *Asian Journal of Atmospheric Environment*, vol. 16, no. 1, p. 2 021 087, 2022.

15 P. Soni, R. Srivastava, and S. Tripathi, "Impact of renewed solar dimming on streamflow generation in monsoon dominated tropical river basins," *Journal of Hydro-environment Research*, 2022.

16 **P. Soni**, H. Medhi, A. Sagar, P. Garg, A. Singh, and U. Karna, "Runoff estimation using digital image processing for residential areas," *AQUA—Water Infrastructure, Ecosystems and Society*, vol. 71, no. 8, pp. 938–948, 2022.

17 A. K. Gupta and **P. Soni**, "Wheat crop yield estimation using geomatics tools in saharanpur district," *Indian Journal of Agricultural Research*, vol. 1, p. 8, 2021.

18 S. Gupta, **P. Soni**, and A. K. Gupta, "Optimization of wd-xrf analytical technique to measure elemental abundance in pm2.5 dust collected on quartz-fibre filter," *Atmospheric Pollution Research*, vol. 12, no. 3, pp. 345–351, 2021.

19 **P. Soni**, "Effects of covid-19 lockdown phases in india: An atmospheric perspective," *Environment, Development and Sustainability*, vol. 23, no. 8, pp. 12 044–12 055, 2021.

20 **P. Soni**, S. Tripathi, and R. Srivastava, "A comparison of regionalization methods in monsoon dominated tropical river basins," *Journal of Water and Climate Change*, vol. 12, no. 5, pp. 1975–1996, 2021.

21 **P. Soni**, R. Srivastava, and S. Tripathi, "Implication of data uncertainty in the detection of surface radiation trends and observational evidence of renewed solar dimming over india," *Theoretical and Applied Climatology*, vol. 137, no. 3, pp. 2663–2680, 2019.

22 **P. Soni**, S. N. Tripathi, and R. Srivastava, "Radiative effects of black carbon aerosols on indian monsoon: A study using wrf-chem model," *Theoretical and Applied Climatology*, vol. 132, no. 1, pp. 115–134, 2018.

23 P. Soni, R. Srivastava, and S. Tripathi, "Observational evidence of streamflow trends in india," *Modelling of Environmental and Water Resources Systems*, 2017.

Conference Proceedings

1 C. Ashwin, **P. Soni**, and N. Tiwari, "Remote sensing based ph estimation in eastern uttar pradesh using sentinel-2 and machine learning," in *Proceedings of the 2026 IEEE International Conference on AI Engineering and Innovation (AIEI 2026)*, Accepted for presentation and possible inclusion in IEEE Xplore, NIT Jamshedpur, India, Mar. 2026.

2. S. Maurya and **P. Soni**, "Ai-engineering integration of rainfall microphysics and vegetation indicators for agricultural intelligence over varanasi, india," in *Proceedings of the 2026 IEEE International Conference on AI Engineering and Innovation (AIEI 2026)*, Provisionally accepted for presentation and possible inclusion in IEEE Xplore, NIT Jamshedpur, India, Mar. 2026.

3. A. Chitravanshi and **P. Soni**, "Machine learning approaches for prediction of the coefficient of discharge of broad crested weirs," in *AIMS 2025 – International Conference on AI and Materials for Sustainability*, 2025.

4. M. Narahari, N. R. Rawal, and **P. Soni**, "Steady flow analysis performed for flood inundation mapping using," vol. 546, Springer Nature, 2025, p. 95.

5. K. Kumar, R. D. Gupta, and **P. Soni**, "Ann for urban flood flow modelling using real time data," in *Hydro 2023*, 2023.

6. K. Kumar, R. D. Gupta, and **P. Soni**, "Study the effect of urbanization on groundwater balance in agroclimatic zone using ann," in *RHHAR-2023*, 2023.

7. M. Narahari, N. R. Rawal, and **P. Soni**, "Steady flow analysis performed for flood inundation mapping using hec-ras," in *International Conference on Hydraulics, Water Resources and Coastal Engineering*, Springer, 2023, pp. 95–109.

8. M. Narahari, N. Rawal, and **P. Soni**, "Assessment of surface run-off for brahmani-baitarani river basin," in *RHHAR-2023*, 2023.

9. M. Narahari, N. Rawal, and **P. Soni**, "Steady flow analysis performed for flood inundation mapping using hec-ras," in *Hydro 2023*, 2023.

10. R. Srivastava, **P. Soni**, and S. Tripathi, "Impact of renewed solar dimming on hydrology of river basins in peninsular india," in *AGU Fall Meeting Abstracts*, vol. 2017, 2017, GC23A–1041.

11. P. Soni, S. N. Tripathi, and R. Srivastava, "Performance of wrf-chem model during monsoon season over india," in *Annual Monsoon Workshop Pune*, 2015.

Books and Chapters

1. P. Kumar, R. R. Meena, and **P. Soni**, "Sustainable environmental waste management strategies: The study of urban solid waste management's development," in *Innovative Technologies for Waste Management*, 2025, pp. 978–3.

2. R. R. Meena, H. Rathva, and **P. Soni**, "Electrochemical processes for arsenic mitigation," in *Emerging and Innovative Arsenic Removal Technologies for a Sustainable Future*, Springer, 2025, pp. 107–128.

3. R. R. Meena, S. Kumar, and **P. Soni**, "Electrocoagulation of fluoride from water with fe-based ion electrode," in *Advanced Treatment Technologies for Fluoride Removal in Water: Water Purification*, Springer, 2024, pp. 159–180.

4. R. R. Meena, S. Kumar, and P. Soni, "Electrocoagulation of fluoride from water with fe-based ion electrode," in *Advanced Treatment Technologies for Fluoride Removal in Water*, Springer Nature, 2023.

5. H. Medhi and **P. Soni**, "Understanding the relationship between normalized difference vegetation index and meteorological attribute using clustering algorithm," in *Smart Sensors, Actuators and Decision Support Systems for Precision Agriculture*, Taylor & Francis Group, USA, 2022.

Consultancy Projects

- Leaching Testing Report (3 sites), Subsidence Report, Ground Water Aquifer Study, Traffic Study from borrow area to filling area (3 sites), Ambient Air Quality Study (3 sites)
- Techno-economics Feasibility Study for filling of Ash (13 sites) - Obra Section 2 & 3, Stone Quarry (1 site), Near Circuit House (1 site)
- Annual Inspection of GPI operating in Ganga Basins States
- Third-Party Inspection of 37 Nos. under construction piped water supplies of various villages of Rampur District under MSDP/PM Jan Vikas Program
- Feasibility Study for Installation of Rain Water Harvesting Scheme at IFFCO Phulpur Township
- Design of Inverted Siphon (Saryu Pariyojna Gonda)
- Scientific study for Investigation of Mine-wise Water Availability and Potential for community Use in ECL
- Feasibility Study for Pond Restoration at Azad Park Allahabad
- Wetting of Detailed Project Reports under Jal Jeevan Mission
- Various channelization projects for flood and erosion protection at:
    - Village Gangepur Mathia embankment (Ghaghra River, Azamgarh)
    - Village Chakpurwa Mathia embankment (Sharda River, Lakhimpur)
    - Embankment on right bank of Ghaghra River (Sant Kabir, B.D. Embankment K.B.)
    - Village Achhedih (left bank of Rapti River, Gorakhpur)
    - Village Chandpur Katauli (left bank of Saryu River, Gonda)
    - Village Koirin Purva (right bank of Saryu River, Barabanki)
    - Village Leelapurwa (right bank of Sharda River, Sitapur)
    - Village Jagdishpur (right bank of Rapti River, Gorakhpur)
    - Village Telwari (right bank of Saryu River, Barabanki)

Thesis Supervised

Ph.D. Ongoing

- **Saurabh Maurya (2025–Ongoing):** Air Pollution and Crop Yield.
- **Vineet Jain (2025–Ongoing):** Pollution Dispersion in ground Water.
- **Maniranjan (2022–Ongoing):** Comprehensive Assessment of Groundwater in Tropical River Basins using Machine Learning and SWAT Model.
- **Megavath Narahari (2021–Ongoing):** Effects of Climate Change on Water Quality.

Thesis Supervised (continued)

- **Krishna Kumar (2022–Ongoing):** Crop Yield Estimation and Forecasting using Machine Learning.
- **Hari Prakash (2023–Ongoing):** Peak Discharge Estimation for Ungauged Basins.
- **Ashwin Chitravanshi (2023–Ongoing):** Water Quality Modeling for Varuna River Basin.

M.Tech Students

- **Ritika Upadhyay (2024-Ongoing):** Impact of Pollution on Rainfall Characteristics. *Co-supervisor (External with BHU).*
- **Makardhwaj Awasthi (2024-Ongoing):** Atmospheric–Rainfall Interaction Analysis. *Co-supervisor (External with BHU).*
- **Buddepu Harsha Vardhan (2023-2025):** A Comparative Evaluation of WRF and ANN for Weather Prediction: Performance and Accuracy.
- **Saurabh Maurya (2023-2025):** Investigation of Microphysical Characteristics of Raindrop Size Distribution using WRF Model.
- **Raju Singh (2023-2025):** Estimation of Surface Velocity in Open Channel Flows using Image Processing.
- **Shailesh Kushwaha (2023-2025):** Seasonal Forecasting of Crop Yield over Varuna River Basin.
- **Tripti Yadav (2023-2025):** Estimation of E-Flow for Varuna River Basin.
- **Ritika Upadhyay (2025):** Impact of Pollution on Rainfall Characteristics (Tentative). *Co-supervisor (External with BHU).*
- **Makardhwaj Awasthi (2025):** Atmospheric–Rainfall Interaction Analysis (Tentative). *Co-supervisor (External with BHU).*
- **Suryansh Srivastava (2025):** Geomorphological Change Analysis using Arc-GIS (Tentative). *Co-supervisor (External with BHU).*
- **Shadab Ansari (2020):** Single and Dual Frequency Atmospheric Free Precise Point Positioning using Combined GPS and GLONASS Observations.
- **Prity Dhanai (2021):** Rainfall Triggered Slope Instability Analysis with Changing Climate.
- **Pankaj Singh (2021):** Spatiotemporal Prediction of Criteria Air Pollutants using Air Pollution Monitoring Station Data.
- **Shubham Khare (2022):** Effects of COVID-19 Lockdown on Meteorological Variables over India.
- **Anandita Raj (2022):** Impacts of Climate Change on Water Quality for Krishna River Basin.

B.Tech Students

- **Nitish Kumar Maurya (20065067), Umesh Harsana (20065109) (2024):** River Meandering Analysis Project.
- **Dinesh Singh (20065035), Harshit Bangari (20065041), Bhuvnesh Gaur (20065030) (2024):** Flood Risk Zone Mapping using ArcGIS.
- **Mayank Mani Nath Gupta (21065127) (2024):** River Extraction using Image Processing and QGIS using Python.
- **Saatwiik Srivastava (21065091) (2024):** Rainfall–Runoff Modeling using ANN.
- **Vishal Yadav (21065113) (2024):** River Boundary Extraction using Image Processing and QGIS.
- **Aditi Gupta (21065006) (2024):** Monthly Discharge Estimation using Image Processing.
- **Shridhar Kumar (21065100) (2024):** Application of ANN in Rainfall–Runoff Modeling.
- **Aman Mani Shandilya (22065012) (2025):** River Extraction and Analysis using Image Processing and QGIS.
- **Sanyam Jain (22065118) (2025):** Application of ANN in Rainfall–Runoff Modeling.

Thesis Supervised (continued)

- **Harsh Pant (22065128), Aditya Maurya (22065122) (2025):** Analysis of NCEP Global Forecast Data.
- **Chandraveer Singh (23065035) (2025):** Topic under progress.
- **Danish Dubey (23065038) (2025):** CFD Modeling of Varuna River Basin.
- **Harsh Suryawanshi (23065051) (2025):** Impact of Climate Change on Water Footprint and Crop Yield over Mahanadi Basin, Odisha.
- **Sachin (23065092) (2025):** Impact of Climate Change on Water Footprint and Crop Yield over Mahanadi Basin, Odisha.
- **Vaibhav Rajvardhan (23065110) (2025):** Impact of Climate Change on Water Footprint and Crop Yield over Mahanadi Basin, Odisha.
- **Mahesh Chandra Verma, Nishant Rai, Balram Yogi, Kuldeep Bhamu (2020):** Impact of Climate Change on Water Resources using Artificial Neural Network (ANN).
- **Anitya Sagar, Pulkit Garg, Abhay Singh, Umesh Karna (2021):** Design of Rainwater Harvesting Structure for MNNIT Allahabad Campus.
- **Shiv Virendra Chaubey, Ajit Kumar, Aditya Kumar, Shubham Kumar Singh (2022):** Impact of Climate Change on Water Footprint and Crop Yield over Mahanadi Basin, Odisha.

External Thesis (BITS Pilani)

- **Nimish Tiwari (2022A2PS1449H) (2026):** Prediction of Water Quality Parameters of the Varuna River Basin using Remote Sensing and Machine Learning. *Co-supervisor with Prof. Abhradeep Majumder (BITS Pilani).*

Teaching

Courses Taught

- **Climate Change and Water Resources Modeling**
- **Ground Water Hydrology** (CE-21352)
- **Environment and Climate Change** (CE-12101)
- **Computer Based Numerical Techniques** (CE-13102)
- **Computer Based Numerical Techniques Lab** (CE-13202)
- **Engineering Hydrology** (CE-17310)
- **Open Channel Hydraulics** (CE-18309)
- **Surveying Lab** (CE-14201)
- **Water Resource Engineering-I** (CE-1851)
- **Fluid Mechanics-II** (CE-4105)

Professional Memberships

- Life Member, Indian Desalination Association (LM-534)
- Life Member, Indian Concrete Institute (LM-13152)
- Life Member, Indian Water Works Association (LM-10249)

Skills

Languages	Strong reading, writing and speaking competencies for English.
Coding	Java, PHP, Python, R, LaTeX, ldots

Skills (continued)

Web Dev	HTML, CSS, JavaScript.
Misc.	Academic research, teaching, training, consultation, typesetting and publishing.

Miscellaneous Experience

Awards and Achievements

2016	**Certificate of Appreciation**, from Director, IIT Kanpur for receiving excellent feedback from students during the summer course ESO208A (Introduction to Numerical Methods and Analysis).
2015	**Best Poster Award**, in category Monsoon Simulation and Prediction at Annual Monsoon Workshop Pune (IMSP), organized by India Institute of Tropical Meteorology (IITM), Pune.
2014, 2015, 2016	**Winner**, Institute Pool Championship, IIT Kanpur.
2012	**Academic Excellence Achievement Award**, for highest CPI during M.Tech in Civil Engineering, IIT Kanpur.
2011	**First Prize**, Snooker Inter-Hall Tournament, IIT Kanpur.
	DAAD Masters Sandwich Program, Awarded DAAD Scholarship.
2010	**Second Prize**, Billiards Inter-Hall Tournament, IIT Kanpur.

Expert Lectures Delivered

- Expert Lecture on "Estimation of Scour Depth for Large Bridges over Alluvial Rivers", delivered under the training program *INFRA-IMPACT: Integrated Training on Bridge and Pavement Design, Inspection, Monitoring, Performance Assessment & Capacity Building*, organized by IIT Patna for engineers of the Rural Works Department, Government of Bihar (10 January 2026)
- Expert Lecture on "Forecasting Hydrological Events Using SWAT-GFS Models and Their Role in Decision Support Systems for Water Resource Management", Shelter Academy 2025 (International Program), via Microsoft Teams, organized by Arcadis–UN-Habitat–UNHCR Consortium (2025)
- Waste management program under the Green Skill Development Program, Ministry of Environment, Forest and Climate Change, AFRI, Jodhpur (2018–2019)
- Basics of Linux and MATLAB, InSAR: Theory, Processing and Application (2019)
- Numerical Modeling using Finite Difference Methods, Numerical and Optimization Techniques (NOT-2019)
- National Innovation and Start-up Policy (NISP): Guiding Framework for HEIs, Sadanlal Savaldas Khanna Girls Degree College
- Site Visit to Sewage Treatment Plant (STP), NOVEL APPROACHES IN WASTEWATER TREATMENT (NAWT-2022)
- World Water Day Webinar on Water Conservation and Rain Water Harvesting, Lakshya NGO Lucknow (2022)
- Chaired session in 54th Annual Convention and Exhibition at Lucknow hosted by IWWA Lucknow and Prayagraj Centres

Short Term Courses Organized

- Numerical and Optimization Techniques (NOT-2019)
- Online Numerical and Optimization Techniques (NOT-2020)

Short Term Courses Organized (continued)

- NOVEL APPROACHES IN WASTEWATER TREATMENT (NAWT-2022)
- DROUGHT AND FLOOD MANAGEMENT (DAM-22)
- National Brainstorming Workshop: People's Varuna: Culturally Connecting with the River

Other Responsibilities

IIT (BHU) Varanasi (2023–Present)

- Member, Time Table Committee, Department of Civil Engineering (2023–25)
- Member, Departmental Website Committee, Department of Civil Engineering (2023–)
- Member, UG Core Courses Committee, IIT (BHU) (2023–24)
- Proctor, IIT (BHU) (2024–)
- Warden, A. S. N. Bose Hostel (2024–)
- PI, Time Table, Department of Civil Engineering (2023–25)
- Examination In-Charge, Department of Civil Engineering (2023–25)
- PI, Ganga Laboratory, Department of Civil Engineering (2023–)
- Counselor, SNTC, IIT (BHU) (2025–)
- Member, IALS, IIT (BHU) (2025–)
- Member, Festival Committee, IIT (BHU) (2025–)

NIT Jamshedpur (2022-2023)

- Co-FI, Examination
- FI, Lawn Tennis
- Coordinator, AISHE
- P.I. CAD Lab, Civil Engineering
- Faculty Advisor, Final Year, DCE

MNNIT Allahabad (2019-2022)

- O.C. CAD Lab, WRE Lab, SURVEY Lab, Civil Engineering
- Faculty Coordinator, Tennis
- Member, Time Table Committee,
- B.Tech Project Evaluation Committee,
- Member, DUGC
- Member, NIRF
- Member, TEQIP Committee
- Member,NBA Committee
- Startup Activity Coordinator, Institution Innovation Council

IIT Kanpur

- Convener, SBRA (2015-2016)
- In Charge, Billiard Club, Hall-4 (2012-2013)