



CURRICULUM VITAE

Rajesh Kumar Vishwakarma

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Expertise and skills

The areas of expertise include:

- Urban/Ground water and Environmental Hydrology: Stormwater/wastewater recycling and water conservation and efficiency, Integrated Water Resources Management (IWRM)
- Protecting and restoring water quality, Water pollution and treatment
- Resilience of water infrastructure, water security and adaptation to climate change
- Proficiency in basic MS Office software and as well as C, C++, MATLAB languages.
- Hydrological modelling: Knowledge/experience with ESRI Arc GIS, especially ArcGIS 10, QGIS as well as SWMM, HEC-HMS, HEC-RAS, ANN, CROPWAT and MIKE package (at practitioner level)
- Remote sensing and GIS application for Water Resource management.
- Proficiency in field work pertaining to discharge measurement of stormwater drain system and hydrometeorological parameters.
- Assist with the preparation of technical memoranda, reports and electronic deliverables Assist with studies and alternative analysis
- Demonstrated knowledge of hydrology and open channel hydraulics
- Good communication skills, both verbal and written
- Perform engineering work with the water/wastewater engineering group with heavy inclination on buried infrastructure and conveyance projects

Educational Qualification

Name of institution	Degree(s) or Diploma(s) obtained:	Date of obtainment
Indian Institute of Technology (I.I.T.) Roorkee	Doctor of Philosophy (Ph.D.) in Hydrology	Ongoing (Expected Submission: July 2022)
Indian Institute of Technology (I.I.T.) Roorkee	Master of Technology (M.Tech.) in Hydrology	07/07/2014
College of Agricultural Engineering and Technology (CAET) Dapoli	Bachelor of Technology (B.Tech.) in Agricultural Engineering	22/06/2012

Research and work Experience

- **Sustainability Evaluation of Stormwater drainage system and finding solutions (M. Tech. Thesis):** Objectives and Scope of study: a) To evaluate the pattern of growth of urbanization in Roorkee town and its impact on the storm water management system,

b) Sustainability evaluation of the current storm water management system through various Indicators, c) To identify possible solutions for sustainable storm water management. The work briefly describes about the status of urban growth, Calculation of sustainability indices, sustainability assessment through SWOT analysis and finding solutions or suggested management options for them.

- 1 year experience as an Academic/Researcher/Technical Advisor in Civil Engineering Department, Institute of Information Technology and Management, Gwalior (Madhya Pradesh).
- **Sustainable Urban Stormwater Management (Ph.D. Research ongoing):** This research work will provide to study and identify a) Sustainability Assessment of Stormwater Drainage system of selected Indian cities: in this section various Indian cities has been selected and overall sustainability Indicators has been assessed and compared to assess and monitor the stormwater management system. b) Hydrological and environmental assessment of stormwater in a pilot urban area and management of stormwater quality: This section includes Hydrological characteristics and analysis of storms and stormwater drains, Physio-chemical analysis of stormwater, First-flush coefficient analysis, emerging contaminants analysis, Particle size distribution analysis, development of surrogate parameters etc. c) Exploring improvements in the design of stormwater drainage system for the pilot urban area: this section includes the water sensitive urban design (WSUD) element with the various Best Management Practices (BMPs) and modelling of stormwater drains through stormwater management model (SWMM).

Journal papers

1. Michael J. Bowes, Daniel S. Read, Himanshu Joshi, Rajiv Sinha, Aqib Ansari, Moushumi Hazra, Monica Simon, **Rajesh Vishwakarma**, Linda K. Armstrong, David J. E. Nicholls, Heather D. Wickham, Jade Ward, Laurence R. Carvalho, H. Gwyn Rees, "Nutrient and microbial water quality of the upper Ganga River, India: identification of pollution sources", *Environmental Monitoring and Assessment* (2020) 192:533.
2. Ashutosh Pipraiya, **Rajesh kumar Vishwakarma**, Sachin Tiwari, "Effect of nearby cities on water quality of Chambal river", *International Journal of Advance Engineering and Research Development* Volume 4, Issue 6, June -2017.

Conference papers

1. **Rajesh Kumar Vishwakarma**, Rahul Kumar Singh, "SUDS missed opportunity in Indian City: Case example of Dwarka, India", *Water Security and Climate Change (WSCC) online Conference*, 1-4 March 2021.
2. **Rajesh K. Vishwakarma**, Himanshu Joshi, Ashantha Goonetilleke, "Stormwater Quality Assessment through different sources in a sub-tropical town of India", *EGU 2020 online Conference*, 2-8 May 2020.
3. **Rajesh Kumar Vishwakarma**, Himanshu Joshi, A Goonetilleke, "Quality Assessment of stormwater through different sources of a sub-tropical town of India", *AGU Fall Meeting 2019*, 09-13 December 2019.
4. **Rajesh K. Vishwakarma**, Monica Simon, Moushami hazra, Himanshu Joshi, "Sustainability evaluation of the storm water drainage system of a sub-tropical town of India", *Hydro-2019 International Conference*, 17-20 December 2019.

5. Satyanshu Kumar, **Rajesh Kumar Vishwakarma**, Shishant Gupta, "Urban Lakes and Wetlands: Opportunity and challenges in Indian cities", 3rd Neo-International Conference on Habitable Environments & International Professional Meet (Niche Ipm 2018) 16-17 November 2018.
6. **Rajesh K. Vishwakarma**, Satyanshu Kumar, Abhiney Gupta, "The Drainage system of India's Cities", 4th International conference on Recent Trends & Advancements in Engg. And technology, Sri Mata Vaishno Devi University, Katra, 03-04 November, 2017.
7. Ar Satyanshu Kumar, Ar Abhiney Gupta, **Rajesh Kumar Vishwakarma**, "Multi-hazard Vulnerability of Vernacular buildings in Supaul, India", 4th International conference on Recent Trends & Advancements in Engg. And technology, Sri Mata Vaishno Devi University, Katra, 03-04 November, 2017.
8. Abhiney Gupta, Satyanshu Kumar, **Rajesh Kumar Vishwakarma**, "Promoting Green Architecture through Energy-Efficient Planning: A step towards Sustainability", 4th International conference on Recent Trends & Advancements in Engg. And technology, Sri Mata Vaishno Devi University, Katra, 03-04 November, 2017.

Professional Trainings

- Online training on "**Water Education for Sustainability and Global Citizenship**" organised by CapNet.
- One day (4th May 2019) workshop on Publishing in Academic Journals: An Author's Workshop in IIT Roorkee.
- **Training on 'Tools and approaches for citywide water and sanitation management' at AAETI Nimli, Rajasthan, India (16th April-26th April, 2019):** PART I Water Prudent Cities: Resources Assessment, Budgeting, Planning and Augmentation Hydrological Information System (HIS) and Geographic Information System (GIS), Water Sensitive Urban Design & Planning (WSUDP) (Sustainable Urban Drainage System - SuDS and Rainwater Harvesting - RWH), PART II Non Sewered Sanitation: Decentralised Wastewater Treatment Systems (DWWTs), Shit Flow Diagram (SFD) and Faecal Sludge and Septage Management (FSSM)
- **Training on 'Green water Infrastructure I- Sustainable Urban stormwater management' under GIAN Program in Indian Institute of Technology Roorkee, India (18th July-27th July, 2018):** Topic covered: Urban hydrological cycle and processes, Urban growth and its impacts, Runoff estimation, Stormwater pollution, Stormwater monitoring and characterization, Framework(s) of Stormwater Management, Hydrologic and Hydraulic design of Stormwater system, Philosophy of Water Sensitive Urban Design (WSUD), Design of WSUD elements, Stormwater system modeling, Role of wetlands in stormwater management, Stormwater harvesting.
- **Online course on "RS & GIS Applications in Water Resource Management" conducted by Indian Institute of Remote Sensing, Dehradun from May 22, 2017 to June 09, 2017:** Automatic Feature Extraction, Image Statistics, Basic Remote Sensing, Photogrammetry and Cartography, Digital Image Processing, Geographical Information System, Global Navigation Satellite System, Customization of Geospatial Tools, Applications of Geospatial Technologies.
- **Training on 'Green water Infrastructure II-Innovative and Sustainable wastewater management' under GIAN Program in Indian Institute of Technology Roorkee, India (29th May-09th June, 2017):** Topic covered: Wastewater: a resource; Wastewater analysis and characterization; Legislative and regulatory framework for wastewater treatment and disposal; Overview of conventional and advanced treatment; Issues and challenges in design, operation and management of wastewater treatment systems;

Sustainable wastewater management: concept and practices; Decentralized wastewater treatment; Wastewater reuse; ECOSAN principles; Constructed wetlands: concept and application for domestic and industrial wastewater; Design and operation of Horizontal flow, Vertical flow, French type and Multi stage constructed wetlands; Modelling of wetlands.

- **Training on ‘Sustainable Urban Stormwater Management’ under GIAN Program in Indian Institute of Technology Roorkee, India (27th February- 6th march, 2017):** Expose attendees to the BASINS interface and the data gathering process for developing a watershed model, Introduce the attendees to details of watershed modelling, which includes teaching model algorithms, Develop a watershed model that can simulate hydrology, and water quality, Calibrate watershed model; Develop scenarios to study the effect of watershed management on the receiving water quality.
- One day (27th December, 2016) National Seminar(s) on ‘Mainstreaming Sustainable Urban Water Management’ in India Habitat Centre, New Delhi, India.
- Two day (26-27th November, 2016) National workshop on ‘Challenges in irrigation management for Food Security’ in Indian Institute of Technology Roorkee, India.
- **Training Programme on ‘Sustainable Urban Water Management’ in Centre for Science and Environment, New Delhi (23rd to 26 February 2016):** Topic covered: Water Sensitive Urban Design & Planning (WSUDP), Sustainable Urban Drainage System - SuDS and Rainwater Harvesting system design - RWH, Design of Decentralised Wastewater Treatment Systems (DWWTs)
- 4 month (January 2012 to April 2012) Industrial training programme on Field Testing of Tractor Mounted Fertilizer Spreeder (Short run test) in Mahindra & Mahindra Ltd. Kandivli (E) Mumbai.
- 1 month training programme (June 2011) in Central Institute of Post-Harvest Engineering and Technology, Ludhiana
- 1 month Training programme (June 2010) in Farm Machinery Training & Testing Institute (Southern Region), Anantapur.

Professional Memberships

- Student membership of European geophysical Union (EGU) for the year 2019-2020.
- Student membership of International Water Resources Association (IWRA) for the year 2019-2020
- Student member in International Association of Hydrological Sciences.

Research UG Projects

Completed

1. Water Quality Analysis of Chambal River (2015).
2. Hydro chemical Analysis of Swarnrekha River, Gwalior (2015).
3. Interlinking of River (2015).
4. Land use Classification of Gwalior City, India (2015).

Achievements and Extra Curricular Activity

- General Secretary Academic Affairs (PG), IIT Roorkee (2017-18), Member of SAC (Student Affairs Council) committee, IIT Roorkee, (2013-14), Hostel Secretary of Ganga Bhawan, IIT Roorkee, (2013-14).
- Cultural Co-ordinator and Sport Co-ordinator for Ganga Bhawan Day 2014.
- Represented the Dept. of Hydrology in Cognizance 2013 (Tech Fest of IIT Roorkee) as Co-Convener for the department.
- Secured First position in the event Spot-Light in IIT Roorkee Tech fest Cognizance-2014.
- Secured Third position in the event Orchestra named 'Aapli Mati Aapla Maharashtra' all over Maharashtra in 2012, Secured Second position in the event Orchestra named 'Aapli Mati Aapla Maharashtra' inter University Competition in 2012, Secured Second position in the event Orchestra named 'Aapli Mati Aapla Maharashtra' inter University Competition in 2011.
- Participated in the event 'Mahindra Samridhi India Agri Award-2012' held in New Delhi.
- Qualified All India GATE Exam 2011 (AIR-160) and GATE Exam 2012 (AIR-51) in Agricultural Engineering stream.
- Secured First position in the Chess tournament in Intra University Competition-2008.
- Qualified All India Entrance Examination in Agriculture (AIEEA) Organized by Indian Council of Agricultural Research (ICAR) with AIR-671 in 2008.
- Good knowledge of Internet and an agile sportsman and won many prizes and competition in above
- Understands Project management
- Understands Programme Management
- Headed editorial committee in number of Technical and Cultural programme in college.

References

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Certification

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience.



Full name of the research scholar: Rajesh Kumar Vishwakarma

Date: 02/05/2022

Place: Roorkee