

Abhinav Wadhwa, Ph.D.

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Education

- 2016 - 2021 Ph.D. in Water Resource Engineering
Vellore Institute of Technology, Tamil Nadu, India
Dissertation: A study on the impact of climate change and, land-use change on the performance of stormwater control measures
Advisor: Dr. K. Pavan Kumar
- 2014-2016 M. Tech in Construction Engineering and Management
SRM University, Kattankulathur, Tamil Nadu, India,
Advisor: Dr. Tamilarasu V
- 2010-2014 B. Tech. in Civil Engineering
Jaypee University of Information Technology, Waknaghat, Solan, India

Appointments

- Postdoctoral Researcher** | Discovery Partner Institute, University of Illinois System 2023 – current
Supervisor: Dr. Ashish Sharma
- Postdoctoral Researcher** | ICWaR, IISc Bangalore 2021 – 2023
Supervisor: Dr. Pradeep P Mujumdar
- Graduate Research Assistant** | Vellore Institute of Technology 2016 – 2019
Advisor: Dr. Pavan Kumar K

Research Interests

Water Resource Engineering, Urban Stormwater Management, Uncertainty and Fuzzy system, Operation Research, Life Cycle Assessment, Sustainability, Remote Sensing and GIS, Urban Planning and Management, Analytic Hierarchy Processing, Climate Change Adaptation

Peer-Reviewed Journal Publications

- Venkatesh Budamala, **Abhinav Wadhwa**, Rajarshi Das Bhowmik, Satyaji Rao YR, K.S. Kasiviswanathan and Amit Baburao Mahindrakar “Adaptive framework for multi-temporal downscaling in the ungauged basins”, Journal of Hydrology, 625 (B), 130110, 1-15, <https://doi.org/10.1016/j.jhydrol.2023.130110>
- Abhinav Wadhwa**, Venkatesh Bundamala, K. S. Kasiviswanathan and Pavan Kumar K “Low Impact Development (LID) Control Feasibility in a Small-Scale Urban Catchment for Altered Climate Change Scenarios”, Hydrological Sciences Journal, 1-14 <https://doi.org/10.1080/02626667.2023.2239797>
- Suresh Devaraj, Kiran Yarrakula, Tapas Ranjan Martha, Geetha Priya Murugesan, Divya Sekhar Vaka, Samvedya Surampudi, **Abhinav Wadhwa**, Parthiban Loganathan & Venkatesh Budamala (2022), “Time-series SAR interferometry approach for landslide identification in mountainous areas of Western Ghats, India” Journal of Earth System Science volume, 131 (133): 1-17 <https://doi.org/10.1007/s12040-022-01876-3>

- Abhinav Wadhwa**, K Pavan Kumar (2021), "A Study on the Effectiveness of Percolation Ponds as a Stormwater Harvesting Alternative for a Semi-Urban Catchment", *AQUA: Water Infrastructure, Ecosystems and Society*, 70 (2): 184–201 <https://doi.org/10.2166/aqua.2021.039>
- Abhinav Wadhwa**, K Pavan Kumar (2020), "Selection of best stormwater management alternative based on storm- control measures (SCM) efficiency indices", *Water Policy*, 22 (4): 702–715 <https://doi.org/10.2166/wp.2020.168>
- Jovish John, G. Bindu, B. Srimuruganandam, **Abhinav Wadhwa**, Poornima Rajan (2020), "Land use/land cover and land surface temperature analysis in Wayanad district, India, using satellite imagery", *Annals of GIS*, 26 (4): 343–360 <https://doi.org/10.1080/19475683.2020.1733662>
- Abhinav Wadhwa**, B. Srimuruganandam, K. Pavan Kumar (2017), "Stream flow non-source pollutant analysis using SWAT modeling", *International Journal of Civil Engineering and Technology (IJCIET)*, 8(7): 283:294.
- Abhinav Wadhwa**, K. Santhi, K Pavan Kumar, Jithin Jose, "Identify suitable classification algorithm for water pixel count extraction – A case study of Puzhal lake", *Indian Journal of Ecology*, 2018 45(4): 697-703.
- Abhinav Wadhwa**, V. Thamilarasu, Rajprasad, "An Experimental investigation on physical, chemical and mechanical properties of concrete blocks mixed partially with burnt coconut shell powder", *International journal of Chemical Sciences*, 14(S1), 2016, 353-358.
- Abhinav Wadhwa**, B. Srimuruganandam and K. Pavan Kumar., 2022. Chapter 10- "Application of densely stacked satellite image classification and multinomial logistic regression analysis in predicting urban sprawl", In: John G Lyon (eds) *Geospatial Information Handbook for Water Resources and Watershed Management*, Volume 2, CRC Press, Routledge-Taylor and Francis, Boca Raton, USA.
- Venkatesh Budamala, **Abhinav Wadhwa**, Amit B. Mahindrakar and B. Srimuruganandam., 2022. Chapter 11 - "Temporal downscaling of daily to minute interval precipitation by emulator modelling based genetic optimization", In: John G Lyon (eds) *Geospatial Information Handbook for Water Resources and Watershed Management*, Volume 1, CRC Press, Routledge-Taylor and Francis, Boca Raton, USA.

Selected Conferences & Talks

- Design and Development of Urban Flood Model* – Seminar at Consortium for DEWATS Dissemination Society (CDD), 24th June 2023
- Vemuri Harini, **Abhinav Wadhwa**, P P Mujumdar, "Impact of Spatio-Temporal Disaggregation of Rainfall on Hydrological Modelling", EGU General Assembly 2023, held at Vienna, Austria in 2023.
- Naman Kishan Rastogi, **Abhinav Wadhwa**, P P Mujumdar, "Impact of climate change on non-stationary IDF curves for urban areas", EGU General Assembly 2023, held at Vienna, Austria in 2023.
- Nagaraju Gaddam, **Abhinav Wadhwa**, Likhitha Pentakota, Pradeep Mujumdar, "Simulation of Extreme Rainfall Events using an Integrated Single-Layer Urban Canopy Model (UCM) with WRF-WUDAPT Configuration" EGU General Assembly 2023, held at Vienna, Austria in 2023.
- Likhitha P, **Abhinav Wadhwa**, Shubha Avinash, Nagaraju Gaddam, "Low Impact Development (LID) as Flood Control Alternatives for Rapidly Changing Urban Landscape", AGU Fall Meeting 2022, held in Chicago in 2022.
- Nagaraju Gaddam, **Abhinav Wadhwa**, Likhitha P, Pradeep P Mujumdar, "WRF- SWMM Coupled Model Performance Assessment with LCZ Classifications", AGU Fall Meeting 2022, held in Chicago in 2022.
- Dev Niyogi, Pallavi Gavali, Mohamed Niyaz, Srujan Gavhale, Arun Dwivedi, Sumita Kedia, Sagar Pokale, Gouri Kadam, Akshara Kaginalkar, **Abhinav Wadhwa**, Likhitha P, Pradeep P Mujumdar "Coupled Meteorology and Hydrology Modelling to Forecast Flood Extreme Events: Case Study of Pune, India", AGU Fall Meeting 2022, held in Chicago in 2022.

Suresh Devaraj, Kiran Yarrakula, Colins Johnny, **Abhinav Wadhwa**. "Comparative analysis of INSAT-3D derived precipitation data with IMD data products over Indian Sub-continent.", 2019 Cambodia SWAT Conference: Database and GIS Application and Development, held at Cambodia in 2019.

Abhinav Wadhwa. V. Thamilarasu, Rajprasad, "Experimental investigation on physical, chemical and mechanical properties of concrete blocks mixed partially with burnt coconut shell powder", International Conference on Disaster Management and Civil Engineering (ICDMCE), held at Avadi, Tamil Nadu in 2016.

Awards

2020 Annals of GIS, 2nd most downloaded paper award for papers published in Annals of GIS in 2020.

2020 Research Award, Vellore Institute of Technology for outstanding performance in Centre for Disaster Mitigation and Management (CDMM), Vellore Institute of Technology, Vellore in 2020.

Professional Membership

American Geophysical Union (AGU), member since 2021

European Geosciences Union (EGU), member since 2023

Professional Service

Reviewer for Archived Journals

Journal of Water and Climate Change

River Journal

AQUA: Water Infrastructure, Ecosystems and Society

Journal of Hydrology

Nature Cities

Relevant Skills

Language: English, Hindi, Punjabi, Kannada, Tamil, Telugu

Programming: MATLAB, R, Python, C and C#

Software: SWMM, HEC HMS, HEC RAS, MIKE, Storm CAD, SWAT, IDRIS, ArcGIS, ERDAS Imagine, QGIS, MODFLOW, EPANET, Primavera.