Ankit Deshmukh

PH.D. • WATER RESOURCE

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BRIEF BIO-SKETCH

I am currently working as an assistant professor in the Department of Civil Engineering at Pandit Deendayal Petroleum University, Gujarat, India. I have obtained a doctoral degree in Water resources from the Indian Institute of Technology, Hyderabad (Jan 2021). My fields of interest are Computational Hydrology, water resource management, and understating the catchment response under anthropogenic changes. In my doctorate, I worked on the approaches to identify the catchment vulnerability to environmental changes. My current research focuses on the development of a Physio-climatic catchment characteristics dataset for the Indian subcontinent that can be utilized for prediction in the ungauged basins. I possess a strong understanding of GIS processing, and efficient in Geo-spatial analysis. I am highly motivated in the field of data analysis (finding meaningful insights in data), skilled in programming with R, MATLAB, and Python scripting, and looking for inter-disciplinary research opportunities and collaboration. I am a passionate learner and trying to be a better teacher.

PROFESSIONAL EXPERIENCE

Assistant Professor at Department of Civil Engineering — Gujarat, India, August 2020
Pandit Deendayal Petroleum University, Gujarat

- Hydrology & Water Resources
- Advanced Surveying & Geomatics
- Basic Surveying

EDUCATION

Doctor of Philosophy in Water Resource — Hyderabad, January 2021
Indian Institute of Technology Hyderabad

Topic: Assessing vulnerability of catchments to environmental changes
Supervisors: Dr. Riddhi Singh

Master of Technology in Water Resources Engineering — Hyderabad, January 2016
Indian Institute of Technology Hyderabad

Topic: Physio-climatic controls on vulnerability of watersheds to climate and land use change across the United States
Supervisors: Dr. Riddhi Singh
CGPA: 8.87

Bachelor of Engineering in Civil Engineering — Bhopal, August 2013
Bansal Institute of Science and Technology, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal

Topic: Study of Rainwater Harvesting System at BIST Bhopal
Supervisors: Prof. Maroof Khan
Percentage: 76.6% with distinction

SKILLS

Area of Interests	Hydrologic modeling, Surface water hydrology & Computational hydrology, Catchment classification, Climate change modeling, Vulnerability framework, Physio-climatic database
Tools	Data analysis, GIS automation and scripting; R, GRASS, and QGIS
Programming	R(1), Matlab(2), Python(3)
Web and illustration	Interactive web apps with R-Shiny, Inkscape & Adobe illustrator, complex data visualization
Content organization	LaTeX, Markdown, Zotero
Languages	English, Hindi

PUBLICATIONS

PEER REVIEW ARTICLES

Deshmukh, A., and Singh, R. (2016). Physio-climatic controls on vulnerability of watersheds to climate and land use change across the United States. Water Resources Research, doi: 10.1002/2016WR019189.

Water Research Resources 4.36

- We quantify watershed vulnerability to environmental change using an exploratory modeling framework.
- We relate catchment's vulnerability to environmental change with its Physio-Climatic characteristics.

Deshmukh, A., and Singh, R. (2019). A Whittaker- Biome based framework to account for the impact of climate change on catchment behavior. Water Resources Research, doi: 10.1029/2018WR023113.

Water Research Resources 4.36

- Propose a method to account for changes in model parameters with climate.
- Show when vulnerability to climate change might be under-estimated.

BOOK CHAPTERS

Singh, R., Veena, S., and Deshmukh, A., (2017). Assessing the vulnerability of water availability across India to climate change and interlinking of rivers. In, Sustainable Holistic Water Resources Management, Raju, S., and Vasan, A. (eds)., 2017, M/S Jain Brothers, New Delhi, ISBN: 978-81-8360-253-2

- Implications of river interlinking on vulnerability of water availability across India.

CONFERENCE PROCEEDING

Kumari, S., **Deshmukh, A.**, Impact of Climate Change on Meteorological Drought in Different Climate Zones Across the Indian Sub-Continent, Fall meeting of the American Geophysical Union, December 2020, San Francisco, USA.

Deshmukh A., Singh, R., Discovering linkages between catchment characteristics and water quality using catchment classification, Water Future International Conference: September 24 – 27, 2019 in Bengaluru, India.

Singh, R., Deshmukh, A., and Samal, A. Catchment classification: a tool to understand hydrology in data scarce regions. 15th Annual Meeting of the Asia Oceania Geosciences Society (AOGS), 03-08 June 2018, Honolulu, Hawaii, USA.

Deshmukh, A., and Singh, R., 2018. Identifying physio-climatic controls on watershed vulnerability to climate and land use change. International Soil and Water Assessment Tool Conference, 10-12 January 2018, Chennai, India.

Deshmukh, A., Samal, S., and Singh, R., 2017. Towards a robust framework for catchment classification. Fall Meeting of the American Geophysical Union, 11-15 December 2017, New Orleans, USA.

Deshmukh, A., Singh, R., Veena Sai. How do watersheds physio-climatic characteristics control its vulnerability to climate and land use change? NWMCCAAAS (2016), MANAGE, Hyderabad, India.

Singh, R., and Deshmukh, A., 2015, December. What controls vulnerability of watersheds to climate and land use change across the United States? Fall meeting of the American Geophysical Union, 14-18 December 2015, San Francisco, USA

EXTRACURRICULAR ACTIVITY

Core member of student organizing committee at "International Conference on Modeling Tools for Sustainable Water Resources Management" organized by Department of Civil Engineering, Indian Institute of Technology Hyderabad, (28-29 December 2014).

Taught data science topics, "Basics of Python", "Data analysis with R", "Basics of LaTeX" to student group at IIT Hyderabad.

TEACHING EXPERIENCE AND MENTORING

Teaching at Pandit Deendayal Petroleum University, India

Undergraduates	Advanced surveying and Geomatics (18CE305T) Basic Surveying (19CE205T) Guided undergraduate project on "Introduction of Hydrologic modeling"
Graduates	Taught "Introduction of GIS techniques and QGIS."
Teaching assistant at IIT Hyderabad	Water resources engineering (CE4502)

HONORS & AWARDS

▸ Recipient of research travel grant from Ministry of Human Resource Development, Govt. of India for presenting research work at the American — Hyderabad, India

Geophysical Union Fall Meeting 2017, held at New Orleans, Louisiana, USA. (December 2017).

▸ Recipient of national fellowship from Ministry of Human Resource Development, Govt. of India to pursue doctoral studies at Indian Institute of Technology Hyderabad, India (2016-20). — Hyderabad, India

▸ Recipient of research excellence award for research performance at IIT Hyderabad for the years in 2016 and 2017. — Hyderabad, India

▸ Recipient of UGC-GATE fellowship from Ministry of Human Resource Development, Govt. of India to pursue Masters' studies at India Institute of Technology Hyderabad, India (2014-15). — Hyderabad, India

▸ Selected for Center sector scholarship for 4 years in Bachelor of Engineering (2009-2013). — Bhopal, India

▸ Recipient of Chief Minister's award for best performance in academics — Bhopal, India
Recipient of Sanskrit scholarship by the Government of Madhya Pradesh in 2009. — Betul, India

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