Dr. Jhilam Sinha

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Education

Degree/Certificate	Institute/Board	Grade/CGPA/Percentage (Max.)	Year
Doctor of Philosophy – **Civil and Environmental Engineering**	University of New South Wales, Sydney	Research Satisfactory	2024
Master of Technology- **Water Resources Engineering and Management**	Indian Institute of Technology, Guwahati	9.05 (10)	2018
Bachelor of Technology- **Civil Engineering**	Tezpur University	8.99 (10)	2016

Research

Research Interests

Surface and sub-surface hydrology

Hydro-climatology

Socio-hydrology

Ecohydrology

Water sustainability and water management

Remote Sensing and hydrological modelling

Peer Reviewed Publications

1. **Sinha, J.**, Sharma, A., Khan, M., & Goyal, M. K. (2018). Assessment of the impacts of climatic variability and anthropogenic stress on hydrologic resilience to warming shifts in Peninsular India. *Scientific reports*, *8*(1), 13833.

2. **Sinha, J.**, Jha, S., & Goyal, M. K. (2019). Influences of Watershed Characteristics on Long-Term Annual and Intra-Annual Water Balances over India. *Journal of Hydrology, 577*, 123970.

3. **Sinha, J.**, Das, J., Jha, S., & Goyal, M. K. (2020). Analysing model disparity in diagnosing the climatic and human stresses on runoff variability over India. *Journal of Hydrology*, *581*, 124407.

4. Kumar, N., **Sinha, J.**, Madramootoo, C. A., & Goyal, M. K. (2020). Quantifying groundwater sensitivity and resilience over peninsular India. *Hydrological Processes*, *34*(26), 5327-5339.

5. **Sinha, J.**, Sharma, A., & Marshall, L. (2023). Hydrological sustainability of international virtual water trade. *Environmental Research Letters*, *18*(12), 124037.

6. **Sinha, J.**, Sharma, A., Marshall, L., & Kim, S. (2024). Characterizing satellite soil moisture drydown: A Bivariate Filtering Approach. *Water Resources Research*, *60*(7), e2022WR034019.

7. **Sinha, J.**, Sharma, A., & Marshall, L. (2024). Spatial Disaggregation of SMAP Soil Moisture Using Higher Resolution Precipitation Data. *Geoscience and Remote Sensing Letters (in communication).*

8. **Sinha, J.**, Sharma, A., & Marshall, L. (2024). Reconstruction of soil moisture time series with characterisation of drydown attributes. *Journal of hydrology (in communication).*

9. Hilly, J.J, **Sinha, J.**, Mani F.S., Turagabeci, A., Jagals, P., Thomas D.S.G., Wiggs, G.F.S., Morawska, L., Singh, K.R., Gucake, J., Ashworth, M., Mataki, M., Hiba, D., Bainivalu, N., Knibbs, L.D., Stuetz, R.M., & Dansie, A.P. (2024). PM2.5 and PM10 concentrations in urban and peri- urban environments of two Pacific Island Countries. *Atmospheric Pollution Research (in communication).*

Conference Papers

1. **Sinha, J.**, Hinge, G. (2018). Spatiotemporal trends of PM2.5 concentrations using satellite data in Meghalaya, India. *3rd Indian International conference on air quality monitoring (IICAQM), 6-7 December 2018, IIT madras.*

2. **Sinha, J.** (2019). Sensitivity of Annual Runoff to Precipitation in Madhya Pradesh, India. 34th *MP Young Scientist Congress (MPYSC), 28 February-1 March 2019, M.P. Council of Science and Technology, Bhopal.*

Conference Presentations

1. **Sinha, J.**, Sharma, A., Marshall, L & Kim, S. (2021). A bivariate filter for characterization of drying rates of satellite soil moisture drydowns. *Modelling and Simulation (MODSIM-2021), 5-10 December 2021, Sydney.*

2. **Sinha, J.**, Sharma, A., Marshall, L & Kim, S. (2022). Characterisation of satellite soil moisture drydowns using a bivariate filter. *International Conference on Water and Environmental Engineering (ICWEE-2022), 27-30 November 2022, Sydney.*

3. **Sinha, J.**, Sharma, A., Marshall, L & Kim, S. (2022). Characterising Satellite Soil Moisture Drying Rates Using a Bivariate Recursive Filtering Approach. *American Geophysical Union Fall Meeting (AGU-2022), 12-16 December 2022, Chicago, Illinois.*

4. **Sinha, J.**, Sharma, A. & Marshall, L. (2023). Evaluating drydown patterns from SMAP L3 using a bivariate recursive filter. *Asia Oceania Geosciences Society (AOGS-2023), 30 July - 4 August 2023, Singapore.*

5. **Sinha, J.**, Sharma, A. & Marshall, L. (2024). Spatially downscaling SMAP Level 3 soil moisture data incorporating higher resolution precipitation information. *Asia Oceania Geosciences Society (AOGS-2024), 23 June – 28 June 2024, South Korea.*

Conference Posters

1. **Sinha, J.**, Goyal, M.K. (2019). Influences of local factors on long-term annual and intra-annual water balances across 25 major river basins in India. *World Environmental and Water Resources Congress (EWRI-2019), 19-23 May 2019, Pittsburgh, Pennsylvania.*

2. **Sinha, J.**, Sharma, A. & Marshall, L. (2022). Sustainability of Virtual Water Trade. *American Geophysical Union Fall Meeting (AGU-2022), 12-16 December 2022, Chicago, Illinois.*

Talks

1. **Sinha, J.** (2019). Hydrologic resilience. *Recent advances in Water Resources and Environmental Engineering, 22-27 April 2019, Technical Education Quality Improvement Programme (TEQIP), IIT Indore.*

Publication Reviewer

Reviewer for Journal of Hydrology

Services

Session assistant for Asia Oceania Geosciences Society (AOGS-2023) conference in Singapore.

Session assistant for Asia Oceania Geosciences Society (AOGS-2024) conference in South Korea.

Media Highlight

India Water Portal

http://www.indiawaterportal.org/articles/human-activities-reduce-catchments-climate-resilience

Research Matters

https://researchmatters.in/news/india%E2%80%99s-river-catchments-are-drying-too-many-too-soon

Work Experiences

Research Assistant in University of New South Wales, Sydney

Dr. Andrew Dansie - *Senior Lecturer, UNSW Sydney* *Sept-Dec 2023*

Postdoctoral writing fellow in University of New South Wales, Sydney

Dr. Ashish Sharma - *Professor, UNSW Sydney* *July-Dec 2023*

Course Marker in University of New South Wales, Sydney

CVEN 3501: Water Resources Engineering *Feb-May 2023*

Demonstrator (Teaching) in University of New South Wales, Sydney

CVEN 3501: Water Resources Engineering *Feb 2020-May 2023*

Junior Research Fellow in Indian Institute of Technology, Indore *Aug 2018-Aug 2019*

Teaching Assistant in Indian Institute of Technology, Guwahati

Hydraulics and hydraulics structures lab *Aug 2016-June 2018*

Research project as a summer intern in Indian Institute of Technology, Kharagpur

Dr. Paramita Bhattacharya- Assistant Professor, IIT kharagpur *June 2015*

Summer Internship in Nagaon Paper Mill (NPM), Jagiroad, Assam, India *June 2014*

Achievements and Honors

Postdoctoral Writing Fellow, 2023: For postdoctoral research (post-submission of thesis) at UNSW, Sydney.

Development and Research Training Grant, 2022 (DRTG): For conference during PhD at UNSW, Sydney**.**

University International post graduate award scholarship, 2019 (UIPA): For PhD research at UNSW, Sydney.

B.Tech Gold medalist, 2016: Secured Gold medal (1st Position in graduating batch 2016) in B.tech

in Civil Engineering.

M.H.R.D (Ministry of Human Resources Development) GATE Fellowship 2016: For Post-Gradutate study at IIT Guwahati

GATE (Graduate Aptitude Test in Engineering) 2016: Secured 90.35 percentile in GATE-2016

Ishan Vikas summer training, 2015: Selected for Ishan Vikas summer training Program under M.H.R.D (on merit basis) at IIT Kharagpur.

Membership

American Geophysical Union (AGU)
Asia Oceania Geosciences Society (AOGS)
Modeling and Simulation Society of Australia and New Zealand (MSSANZ)

Technical skills

Programming languages: C, C++, MATLAB, R, and Python

Softwares: ArcMap, InVest, ArcSWAT, RORB, AutoCAD, and ETABS; **Basic-** STAAD Pro V8i, ERDAS, and ENVI

References

Dr. Ashish Sharma
Professor, University of New South Wales (UNSW), Sydney
Email: A.Sharma@unsw.edu.au

Dr. Lucy Marshall
Professor, Macquarie University
Email: lucy.marshall@mq.edu.au