

Dineshkumar Muthuvel

Post-Doctoral Researcher

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Skills and Knowledge

- R programming
- Data wrangling (dplyr, tidyr)
- Big data analysis
- Data Visualization (ggplot2)
- Machine Learning
- Climate Extremes Risk Analysis
- Climate Change
- GIS & Remote sensing
- Network theory
- Drought analysis
- Hydrologic modelling
- Flood frequency analysis

Experience

- 2024 to Present Research Manager, Nanyang Technological University
- Project: Extreme precipitation risk analysis.
- 2022 to 2024 Post-Doctoral researcher, Indian Institute of Technology Bombay, India.
- Project: Application of network theory in drought propagation.
- 2018 to 2022 Senior research fellow, National Institute of Technology Karnataka
- Project: Multivariate analysis of hydro-meteorological extreme events.

Education

- 2018 to 2022 Ph.D. in Water Resources Engineering and Management,
National Institute of Technology Karnataka, Surathkal
- 2016 to 2018 M. Tech. Water Resources Engineering and Management,
National Institute of Technology Karnataka, Surathkal CGPA : 8.33
- 2011—2015 BE. Civil Engineering, Mepco Schlenk Engg College, Anna
University. CGPA : 7.73

Publications

1. **Muthuvel, D.**, Sivakumar, B., Mahesha, A., 2023. Future global concurrent droughts and their effectson maize yield. Science of the Total Environment 855, 158860. <https://doi.org/10.1016/j.scitotenv.2022.158860>
2. **Muthuvel, D.**, Mahesha, A., 2021a. Multivariate analysis of concurrent droughts and their effects on Kharif crops – A Copula-based approach. International Journal of Climatology 1–22. <https://doi.org/10.1002/joc.7390>
3. **Muthuvel, D.**, Mahesha, A., 2021b. Spatiotemporal Analysis of Compound Agrometeorological Drought and Hot Events in India Using a Standardized Index. J Hydrol Eng 26, 1–15. [https://doi.org/10.1061/\(asce\)he.1943-5584.0002101](https://doi.org/10.1061/(asce)he.1943-5584.0002101)
4. **Muthuvel, D.**, Mahesha, A., 2021c. Copula-Based Frequency and Coincidence Risk Analysis of Floods in Tropical-Seasonal Rivers. J Hydrol Eng 26, 05021007. [https://doi.org/10.1061/\(asce\)he.1943-5584.0002061](https://doi.org/10.1061/(asce)he.1943-5584.0002061)
5. T. M. Sharannya, K. Venkatesh,, Amogh Mudbhatkal, **Muthuvel, D.**, and Amai Mahesha (2021). “Effects of land use and climate change on water scarcity in rivers of the Western Ghats of India”. Environ Monit Assess Springer, <https://doi.org/10.1007/s10661-021-09598-7>
6. **Muthuvel, D.**, Sivakumar, B. Spatial Propagation of Different Drought Types and Their Concurrent Societal Risks: A Complex Networks-Based Analysis, [under review in Journal of Hydrology](#).
7. **Muthuvel, D.**, Sivakumar, B. Cascading Drought Spatial Network: A Complex Networks Approach to Track Spatio-Temporal Propagation from Meteorological to Agricultural Droughts, [under review in Journal of Environmental Management](#).

Conferences

1. **Muthuvel, D.**, Sivakumar, B., Catchment Classification using Network Theor, AOGS 2023, Singapore.
2. **Muthuvel, D.**, Mahesha, A., A comparative study on univariate and bivariate flood frequency analysis in Netravathi basin, Karnataka. Proc. Int. Conf. Hydraulic, Water Resources and Coastal Engg., (HYDRO 2019), BS Publications, Hyderabad, ISBN: 978-93- 8935-484-3, Vol. 1, 609-617.
3. T. M. Sharannya., **Muthuvel, D.**, and Mahesha, A., “Assessment of water balance of a humid tropical river Basin”. Proc. Int. Conf. Hydraulic, Water Resources and Coastal Engg., (HYDRO 2019), BS Publications, Hyderabad, ISBN: 978-93-8935-484-3, Vol. 1, 602-608.

Internships and Achievements

1. **Cracked All-India entrance exams Gate 2015 and 2016** (Graduate Aptitude Test in Engineering) with percentiles of 92.5 and 95.5 in Civil Engineering, respectively.
2. Completed level-1 summer course on Geospatial Technologies conducted by Department of Science and Technology (DST) (July 2019).
3. Participated in a GIAN course of Practical analysis of Environmental data using open-source software (R and QGIS) (February 2018).
4. Presented technical seminar on Impacts of climate change at river basin scale at Indian National Committee on Climate Change (INCCC) workshop (November 2019).
5. Underwent internship at National institute of Hydrology, Belgaum for a period of 45 days (June 2017) working on **bias correction of GCM data**.
6. Worked as intern for a month in Gammon India Ltd. project in NTPL Tuticorin (2012).