

# MANARUCHI MOHAPATRA

## Master of Technology in Remote Sensing and Geographical Information System (GIS) with specialization in Water Resources

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https://manaruchi.github.io/



## CAREER SUMMARY

Experience in application of Remote Sensing and Geospatial technology using Python, Javascript, C++ along with GIS tools such as ArcGIS and QGIS. Proficient in satellite image processing and GIS softwares, geospatial analysis and programming using Python, computational hydrology, scalable data driven processing, application of deep learning and machine learning. Highly motivated, quick learner, hard working and experienced in working in a fast paced environment.

## PROJECTS

Estimation of daily cloud free snow cover dataset and it's assimilation into hydrological model

**Major project, Master of Technology at Indian Institute of Remote Sensing, Dehradun**

- Developed a methodology to remove cloud pixels in MODIS daily snow cover datasets MOD10C1 and MYD10C1 using a series of spatio-temporal cloud mitigation filters and Variational Interpolation.
- Prepared a cloud free daily snow cover dataset of 0.05 degree resolution for 2002-2019 over Asia
- Assimilated the cloud free snow cover data into Variable Infiltration Capacity (VIC) hydrological model
- Calibrated the model and calculated the snow melt contribution to the rivers of north west himalaya.

Deep learning based cloud segmentation in AWiFS data

**Case Study, Master of Technology at Indian Institute of Remote Sensing, Dehradun**

- Developed a U-Net based CNN architecture for cloud and snow segmentation in Advanced Wide Field Sensor (AWiFS) multispectral data

SPIUtility: An open source tool for estimation of Standardized Precipitation Index (SPI)

**Master of Technology at Indian Institute of Remote Sensing, Dehradun**

- Developed a open-source tool as a plugin in QGIS for handling big data problem in calculation and analysis of SPI in different timescales, an index widely used in drought monitoring.

## TECHNICAL STRENGTHS



## ACHIEVEMENTS

**Recipient of Golden Jubilee Fellowship**  
Top performer at Indian Institute of Remote Sensing, Dehradun

## EDUCATION

Master of Technology in Remote Sensing and GIS with specialization in Water Resources

**Indian Institute of Remote Sensing (IIRS-ISRO), Dehradun, India**

August 2018 – August 2020

- CGPA: 8.80

Bachelor of Technology in Civil Engineering

**College of Engineering and Technology, Bhubaneswar, Odisha, India**

July 2014 – June 2018

- CGPA: 8.14

Intermediate (PCMB)

**Saraswati Vidya Mandir, Neelakanthanagar, Berhampur, Odisha, India**

June 2011 – June 2013

- Percentage: 82.50%

Matriculation

**Saraswati Shishu Vidya Mandir, Koraput, Odisha, India**

June 2011

- Percentage: 91.33%

## PUBLICATIONS

- Thakur, P.K., Garg, V., Kalura, P., Agrawal, B., Sharma, V., Mohapatra, M., Chauhan, P. (2020). Water level status of Indian reservoirs: A synoptic view from altimeter observations. Advances in Space Research. <https://doi.org/10.1016/j.asr.2020.06.015>
- Mohapatra, Manaruchi & Nikam, Bhaskar & Kour, Gunjan & Garg, Vaibhav & Thakur, Praveen & Aggarwal, Shiv. (2019). Development of an Open-Source Tool for Handling Big Data Problem in Estimation of Standardized Precipitation Index: SPI-Utility. (ISH-HYDRO 2019 International Conference)
- Deshpande, Saloni & Nikam, Bhaskar & Garg, Vaibhav & Mohapatra, Manaruchi. (2019). Assessment of Meteorological Droughts and their Impact on the Hydrological Regime of Godavari River Basin. (ISH-HYDRO 2019 International Conference)
- Mohapatra, Manaruchi & Nikam, Bhaskar & Gupta, Prasun & Garg, Vaibhav & Thakur, Praveen & Aggarwal, Shiv. (2019). Deep learning based cloud segmentation. (NESAC)