



SOURAV KUMAR

Ph.D. Candidate, Earth System Science and Engineering Division, Department of Civil Engineering, Indian Institute of Technology Guwahati, Guwahati-781039, Assam, India

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EDUCATION



Ph.D.

Earth System Science and Engineering Division, Department of Civil Engineering,
Indian Institute of Technology Guwahati, India

Guwahati, IN

2019 - Present



M.Tech.

Earth System Science and Engineering Division, Department of Civil Engineering,
Indian Institute of Technology Guwahati, India

Guwahati, IN

2016 - 2018

- Key Courses: *Earth System Dynamics, Geohazard Science and Engineering, Advanced Remote Sensing*



B.Tech.

Department of Civil Engineering, Uttarakhand University, India

Dehradun, IN

2012 - 2016

- Key Courses: *Hydrology, Environmental Engineering, Seismology and Earthquake Engineering, Groundwater Engineering*

HONORS, AWARDS, AND SCHOLARSHIPS



2022-23 Fulbright-Nehru Doctoral Research Fellowship

Worked as a Visiting Student Researcher at Department of Earth and Planetary Science, University of California Berkeley, USA (Sep 2022 - May 2023)



Ministry of Human Resources Development (MHRD) Fellowship
For pursuing M.Tech. (2016-18) and Ph.D. (2019-24) at IIT Guwahati



98.10 Percentile in 119873 Candidates

Graduate Aptitude Test in Engineering (GATE) 2016

RESEARCH INTERESTS

Hydrogeology, Geochemical & Isotopic Tracers, Hydrologic Responses to Earthquakes, Groundwater-Surface Water Interactions, Remote Sensing & GIS, and Earth System Dynamics

ACADEMIC PROJECTS

Ph.D. Project

2019 - 2025

Title: Basin-Scale Hydrogeochemistry and Earthquake-Induced Aquifer Modifications in the Brahmaputra River Basin, Northeast India

- Supervisor: Late Prof. Chandan Mahanta and Dr. Archana M Nair

M.Tech. Project

2017 - 2018

Title: A Study on the Spatio-Temporal Changes in Groundwater Storage for India Using GRACE Satellite Data

- Supervisor: Dr. Archana M Nair

SPONSORED/ COLLABORATIVE REASEARCH PROJECTS

Physical and Mathematical River Modeling Study for Brahmani River Delta Rejuvenation

2025 - Present

Under MoU between IIT Guwahati and the Water Resources Department, Government of Odisha, India

Job: Contributing to flume-based modeling of bifurcation hydraulics and sediment dynamics, and preparing the project's scientific report

Study of Glacial Dynamics and Sustainable Hydrological Resources in Arunachal Himalaya

2022

Funded by the Department of Science & Technology, Ministry of Science and Technology, Government of India

Job: Led a basin-scale hydrogeochemical and isotopic investigation of the Brahmaputra River Basin, Northeast India

PUBLICATIONS* AND CONFERENCES

Hydrogeochemical and Isotopic ($\delta^2\text{H}$ and $\delta^{18}\text{O}$) Insights into Groundwater and Surface Water Systems of the Brahmaputra River Basin, Northeast India*

2025

Sourav Kumar, Madhusmita Nanda, Abhishek Dixit, Archana M Nair, Michael Manga

Journal of Hydrology: Regional Studies

[Under Review](#)

Water Geochemistry and Stable Isotope Changes Record Groundwater Mixing After a Regional Earthquake in Northeast India*

2024

Sourav Kumar, Michael Manga, Archana M Nair, Abhishek Dixit, Chandan Mahanta

Geochemistry, Geophysics, Geosystems

[Access Here](#)

Hydrogeochemical Assessment of the Water Resources in the Brahmaputra River Basin, Northeast India

2024

Sourav Kumar, Michael Manga, Abhishek Dixit, Madhusmita Nanda, Suresh A. Kartha and Archana M Nair

AGU Fall Meeting 2024

[Access Here](#)

Mineralogical and Elemental Composition in Sediments of Upper Siang River Basin, Northeastern India*

2023

Abhishek Dixit, Sandip Sampat Sathe, Chandan Mahanta, Sourav Kumar, Sumantra Chaudhuri

Arsenic in the Environment: Bridging Science to Practice for Sustainable Development As2021

[Access Here](#)

A Climate Zone Perspective on Spatiotemporal Variations in GRACE Derived Groundwater Storage (GWS) in India*

2022

Sourav Kumar, Ande Bhuvaneswari Devi, Dhritilekha Deka, Archana M Nair

Journal of the Indian Society of Remote Sensing

[Access Here](#)

Hydrogeochemical Changes in Response to Multiple Earthquakes in Northeast India

2021

Sourav Kumar, Abhishek Dixit, Archana M Nair, Chandan Mahanta, Ananya Bardhan

AGU Fall Meeting 2021

[Access Here](#)

Application of Grain-Size End-Member Modelling in Bed Sediments of the Brahmaputra River

2021

Abhishek Dixit, Sourav Kumar, Chandan Mahanta, Sumantra Chaudhari, Manish Singh Rana

AGU Fall Meeting 2021

[Access Here](#)

A Study on Spatio-Temporal Variability in Groundwater Storage of India Using GRACE Data

2019

Ande Bhuvaneswari Devi, Sourav Kumar, Archana M Nair

AGU Fall Meeting 2019

[Access Here](#)

TEACHING EXPERIENCE

Teaching Assistant — Indian Institute of Technology Guwahati

Assisted in Courses: Geohazard Science and Engineering, Earth System Dynamics, Engineering Geology, Engineering Drawing, and Surveying. — Responsibilities included conducting tutorials, grading assignments/exams, and providing support to students during lab sessions.

TRAININGS AND WORKSHOPS

 Scientific Writing and Publishing Workshop 08/2024 Research Conclave 2024, IIT Guwahati	 Workplace Safety (Online Training) 05/2023 University of California Berkeley, USA	 EHS 101: UC Fundamentals of Laboratory Safety (Online Training) 10/2022 University of California Berkeley, USA
 Workshop on "Acting East: Water and linked Livelihoods- Learning from the Mekong Region" 08/2019 Organized by IIT Guwahati and Asian Confluence	 Workshop on "Seeking Sustainable Solution to Water & State Specific Action Plan for Water Sector of Assam" 07/2019 Organized by IIT Guwahati and The Ministry of Jal Shakti, GOI	 Advanced Excel /Advanced Origin/ImageJ/Patent writing and Copyright Workshop 03/2018 Research Conclave 2018, IIT Guwahati

TECHNICAL AND ANALYTICAL COMPETENCIES

Analytical Instrumentation IC, ICP-OES, MP-AES, AAS, TIC, IRMS for $\delta^2\text{H}$ / $\delta^{18}\text{O}$, in situ hydrochemical analyses	Geochemical Modeling and Data Visualization PHREEQC, Aqion, OriginPro, Grapher	Statistics & Computing R, SPSS, MATLAB, Multivariate Statistics, Trend Analysis & Change Detection
Remote Sensing and Geospatial Analysis ArcGIS, QGIS, Google Earth Engine	Hydrological Datasets and Large-Scale Modeling GRACE/GRACE-FO, GLDAS, Water Balance	Hydroclimatic Analysis Hydrological Extremes, Irrigation and Land Use Impacts, GW-SW Dynamics

POSITION OF RESPONSIBILITY

 Captain Cricket Team, Indian Institute of Technology Guwahati	2017 - 2024
 Welfare Secretary Lohit Hostel, Indian Institute of Technology Guwahati	2021 - 2022
 General Secretary (In-charge) Sports Board, Indian Institute of Technology Guwahati	2021
 General Secretary Lohit Hostel, Indian Institute of Technology Guwahati	2017 - 2018

EXTRA CURRICULAR

Academic

- Guest Speaker, Institute for Geophysics and Planetary Physics Seminars, University of California, Santa Cruz, USA, 2023
- Selected Participant, Fulbright Enrichment Seminar, Washington, DC, USA, 2023
- Led a 16-day field campaign for water sampling in the eastern Himalayas under a project funded by the Department of Science and Technology, Government of India, 2022
- Participated in a 10-day Brahmaputra River Expedition focused on water and sediment sampling, organized by the Ministry of Jal Shakti, Government of India, 2021
- Participant, round table conference on "Managing Flood, Inundation and Erosion in Brahmaputra and Barak Basins in Assam: Seeking Sustainable Solutions," 2019

Sports

- Gold Medalist, B-Division Cricket League 2025, organized by Guwahati Sports Association, Guwahati, Assam, India
- Participant, Assam Premier Club Cricket Championship 2024, organized by Assam Cricket Association, Guwahati, Assam, India
- Gold Medalist, National College Cricket Championship 2023, organized by National College Cricket Association (NCCA), Houston, Texas, USA
- Represented Spartan Cricket Club, San Jose, California, in Winter White Ball League 2022, organized by Northern California Cricket Association (NCCA), California, USA
- Silver Medalist, Regional College Cricket Championship 2022, organized by National College Cricket Association (NCCA), Los Angeles, USA
- Gold Medalist, Rajwada Cricket League 2019, Kota, India
- 4th Place, Cricket, All India Inter-IIT Sports Meet 2019, hosted by IIT Kharagpur, West Bengal, India

Welfare

- Member, Anti-ragging Committee, Lohit Hostel, IIT Guwahati, 2017
- Managed a hostel-level COVID-19 quarantine center during the pandemic, overseeing logistics, safety protocols, and student welfare, 2021

REFERENCES

Dr. Archana M Nair

Associate Professor

M-005, Department of Civil Engineering

Indian Institute of Technology Guwahati, Guwahati-781039, Assam, India

Email: nair.archana@iitg.ac.in

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Prof. Michael Manga

Professor

381, McCone Hall

Department of Earth and Planetary Science

University of California Berkeley, Berkeley-94720-4767, California, USA

Email: mmanga@berkeley.edu

Phone: +1-510-643-8532

Prof. Suresh A. Kartha

Professor

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