SANDIPTA DAS

Post-Doctoral Associate
National Institute of Advanced Studies
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Google Scholar: https://scholar.google.com/citations?user=dWgGMcAAAAAJ&hl=en
ResearchGate: https://www.researchgate.net/profile/Sandipta-Das
Scopus ID: 57216930905

Area of Interests

Geography, Remote Sensing, Geoinformatics, Spatial Analysis, Land Use, Environmental Impact Assessment, Urban Studies, Urban Environment, Regional Development, Urban Landscape, Historical Landscape, Agricultural Yield Assessment. Semi-physical model.

Skills

Satellite Image Processing (DIP), Erdas Imagine, ArcGIS Pro, QGIS, ENVI, Microsoft Office, C and C++Programming language, Google Earth Engine, Semi-Physical Model, Agricultural Yield-estimation, Urban heat island, Landscape assessment, Prediction Modelling in geospatial science.

Ph.D. (2017-2022) in Urban Studies. Topic: **Urban Growth and Its Impact on the Land Environment - A Case Study of Barrackpore Subdivision, West Bengal, India**. Department of Geography, Mangalore University.

My PhD research focuses on urban growth and its impacts on land use, the environment, and cultural landscapes, using Remote Sensing and GIS techniques. The study integrates multi-temporal satellite imagery, spatial analysis, and geospatial modelling to understand long-term environmental and urban transformations. A significant part of the research also examines heritage landscapes and archaeological sites, emphasizing sustainable planning and conservation strategies.

Subject Taught

Geospatial Mapping, Economic Geography, Geomorphology, Urban Geography, Population Geography, Fundamentals and Advances of Remote Sensing and GIS, and Regional Planning.

Central University of Jharkhand (Assistant Professor – Contractual) – 2022-2023

Academic Year	Semester	Course Title	Credits	Level
2021–22	IV	**Himalayan Cryosphere**	3	PG
2021–22	IV	**Himalayan Cryosphere (Practical)**	2	PG
2022–23	III	**Economic Geography**	3	PG
2022–23	II	**Geospatial Mapping**	3	PG
2022–23	II	**Geospatial Mapping (Practical)**	2	PG
2022–23	III	**Urban Environment Management**	3	PG
2022–23	III	**Advances In Remote Sensing**	3	PG
2022–23	III	**Advances In Remote Sensing (Practical)**	2	PG

2022-2023	I	**Analytical Techniques**	3	PG
2022-2023	I	**Analytical Techniques (PRACTICAL)**	2	PG
2022-2023	I	**Geography Of India**	3	PG
2022-2023	I	**Geomorphology (Practical)**	2	PG
2022-2023	I	**Population Geography**	3	UG

National Institute of Advanced Studies **(Post-Doctoral Fellow) –2026**

Academic Year	**Semester**	**Course Title**	**Credits**	**Level**
2026	January to May	**Advanced Remote Sensing & GIS**	**2**	PhD- Course Work

Research Guideship (M.Sc)

Name of Student	Topic
Puspika Das Central University of Jharkhand	Urban Development Vis A Vis Hazard Process: A Comparative Study of Joshimath and Gangtok Township, Himalayan Region
Joydeb Mahato Central University of Jharkhand	Assessment Of Urban Sprawl Through Geospatial Techniques of Jaipur City, Rajasthan
Maheboob Alam Central University of Jharkhand	Mapping Of Historical Settlement in the Saraswati River System Using Geospatial Techniques

Awards

- Qualified **UGC-NET-JRF and Assistant Professor**, December 2015.
- **Best Poster Award** at UGIT'S 6^{TH} International Conference, Department of Geography, Bangalore University, Bangalore, India.

Work and Experience

1. Junior research fellow at **ICAR- Central Inland Fisheries Research Institute**, Barrackpore, Kolkata, from July 2014 to February 2017 for the project entitled "**Strengthening of Database and Geographical Information System for Fisheries Sector**" Sponsored by the Department of Animal Husbandry, Dairying & Fisheries, **Ministry of Agriculture, Government of India, under the central sector scheme.**

2. **Assistant Professor (Contractual)** at **Central University of Jharkhand**, Jharkhand, from 06.02.2022 to 08.09.2023.

3. **Image Analyst (Optical Image Data Processing)** at **Haryana Space Application** Centre under the project entitled "Time Series Mapping of Kharif and Rabi Crops in Haryana- A Geospatial Approach". From 11.09.2023 to 10.01.2025.

4. **Post-Doctoral Associate** at **National Institute of Advanced Studies**, IISC Bangalore, under the project entitled "Towards a National Cultural Landscape Information System: Mapping Heritage Sites for Inclusive Planning" from 21.01.2025 to Present.

Project Works

1. Change Detection of Land-Use /Land-Cover and Shifting of Shoreline of Digha Coastal Area, West Bengal in 2013.

2. Hydrodynamics Changes of River of Part of Bhagirathi-Hooghly, -A Geoinformatics Appraisal" in 2014.

3. Short-term course study in Sustainable Development, RIO+20 India PROGRAM- IARC EDUCATION & OUTREACH DIVISION, RIO+20 United Nations Conference on Sustainable Development in 2013.

4. Short Term Course Study in Water Cooperation, RIO+21 IYWC INDIA PROGRAM- IARC Centre for Science & Culture in 2013.

5. **Historical Nodes and Urban Evolution:** A GIS-Based Assessment of the Spatial Drivers of Settlement Growth in Bangalore in 2025-2026.

Seminar and Conference Participation

1. Presented Paper on **"Impact of growing urban population on environment-a special emphasis in North 24 Parganas district, West Bengal, using geospatial approaches"** at International Seminar on Climate Change, Environment and Society, Organized By Department of Geography, Sree Sankaracharya University of Sanskrit, Kalady, Kerala.

2. Presented poster on **"Site suitability analysis for municipal solid waste disposal in Mangalore city corporation, Karnataka- using geospatial technology"** at **Union Geographic Information Technologists (UGIT**) 6th International Conference, Department of Geography, Bangalore University, Bangalore, India.

3. Presented paper on **"Change detection of urban growth dynamics in Barrackpore Subdivision area, West Bengal 1972-2016 from Landsat observation"** at XIII DGSI International Geography Conference on Sustainable Rural Development- Geospatial Solutions, Department of Geography & Geoinformatics, Bangalore University, Bangalore, 20-22 September 2018.

4. Presented paper on **"Trend of urban growth and its impact on the micro-climate of Barrackpore Subdivision, West Bengal"** at 7th (UGIT) International Conference On "Climate Change, Disaster Risk Reduction and Sustainable Development through Geospatial Technologies", Department of Geography, University of Peradeniya, Srilanka, 24-25 November 2018.

5. Presented paper on **"Characterization of dust particles from tree leaves as an indicator of air pollution in ULBS (urban local bodies): A case study on Barrackpore Subdivision**" at **XIII International Geographical Union (IGU)**-INDIA of International conference on "Heading towards Zero: Sustainable Development in Economy, Environment, and Society", October 19-21st, 2019 organized by Central University of Haryana.

6. Presented paper on **"Nature of urban growth and its effect on land surface temperature increases from Landsat observation – A micro-level case study"** at the 41st National Association of Geographers, India congress held at Sagar Agricultural University on 28-30 December 2019.

7. Presented paper on **"Spatio-temporal analysis of urban functional development and its zone of influence: A micro level study"** in the IGS- International E-Conference on "Earth Sciences and Sustainable Development Goals" at Osmania University, Hyderabad, Telangana in Collaboration with the Indian Geographical Society on 5-7 August, 2021.

8. Presented paper on **"Remote Sensing and GIS-Based Reconstruction of Bijapur's Historical Landscape during the Adil-Shahi Dynasty" in** the ISG-ISRS National Symposium 2025 on Geomatics and space innovations towards Atmanirbhar Bharat: Insights and Frontiers at IIT Kharagpur research park, Kolkata from 25-27 November 2025.

Training and Workshop

1. Attended training program at "**GeoCONNECT 2018**" **"Advanced remote sensing technologies: Hyper spectral and LIDAR"** organized by **Indian Institute of Space Science and Technology**, Valiamala P O, Thiruvananthapuram, Kerala, from 11-14 June, 2018.

2. Attended training program at **National Remote Sensing Centre (DOS, ISRO)**, Hyderabad on "**Large Scale Mapping for City/Urban Planning and Panchayat Raj Application"** from September 24-28, 2018.

3. Attended The Smart Training on **"Multi-Parameter Remote Sensing Data Analysis for Potential Fishery Zone"** At **Space Application Centre, ISRO**, Ahmadabad from 08- 12 October 2018.

4. Attended the Training Programme on **"Monsoon School on Urban Flood"** at Interdisciplinary Centre for Water Research (**ICWaR**), **IISC, Bangalore**, from August 05-10, 2019.

5. Attended TREES Training Programme on **"Advanced Geospatial Technology"** at **Space Application Centre, Ahmedabad, ISRO, Government of India**. From 26-29 November 2019.

6. Attended 21 days online **GIS training Program using QGIS**, organized by the Department of Geography, School of Earth Sciences, **Central University of Karnataka**, jointly with State Institute of Urban Development, Karnataka, India, from 13.07.2020 to 2.8.2020.

7. Completed the 3-month TREES Training Programme on the project entitled **"Modeling Urban Expansion of Kolkata Metropolitan Area Using SLEUTH Urban Growth Model"** at **Space Application Centre, Ahmedabad, ISRO**, and Government of India. From 01-07-2020 to 20-09-2020.

8. Participated in the **UNDRR GETI, UNOSSC & PAHO** Joint Online Training **"Making Cities Resilient: Developing and implementing local disaster risk reduction strategy to respond to COVID-19 and better prepare for the future"** on 08 September-06 October, 2020.

9. Participated in the Online Course on "**Overview of Geoprocessing using Python**" conducted from 18-01-2021 to 29-01-2021 by **Indian Institute of Remote Sensing**, Dehradun, ISRO, **Department of Space**, Government of India.

10. Participated in the Online Course on "**Geospatial Technology for Archaeological Studies"** conducted during 17-05-2021 to 21-05-2021 by Indian Institute of Remote Sensing, Dehradun, **ISRO**, Department of Space, Government of India.

11. Participated in the Online WGCCapD Webinar Series on "**SAR Data Processing"** conducted during 7-05-2021 to 28-05-2021 by Indian Institute of Remote Sensing, Dehradun, **ISRO**, Department of Space, Government of India.

Publications

1. Das, S., Adak, K., & Samantha, K (2014). Hydrodynamic Changes of River Course of Part of Bhagirathi- Hugli in Nadia District – A Geoinformatics Appraisal. International Journal of Geomatics and Geosciences, Volume 5, No 2. ISSN 0976 – 4380.

2. Das, S., & Angadi P, Dasharatha (2016). Impact of Growing Urban Population on Environment- Special Emphasis on North 24 Parganas District, West Bengal, using Geospatial Approaches. Geoeye- International Journal, volume 5, No 2. ISSN- 2319-5371.

3. Das, S., &Angadi P, Dasharatha (2018). Site Suitability Analysis for Municipal Solid Waste Disposal in Mangalore City Corporation, Karnataka- Using Geospatial Technology. International Journal of Science and Research, volume 7, No. 3, 2018. ISSN- 2319-7064.

4. Das, S., & Angadi, D.P. (2020). Land use-land cover (LULC) transformation and its relation with land surface temperature changes: A case study of Barrackpore Subdivision, West Bengal, India, Remote Sensing Applications: Society and Environment, Volume 19, DOI: https://doi.org/10.1016/j.rsase.2020.100322. **Elsevier Publisher (Scopus).**

5. Das, S., Angadi, D.P. (2021). Assessment of urban sprawl using landscape metrics and Shannon's entropy model approach in town level of Barrackpore sub-divisional region, India. Modeling Earth Systems and Environment. https://doi.org/10.1007/s40808-20-00990-9. **Springer Publisher (Scopus).**

6. Das, S., Angadi, D.P. (2021). Land use land cover change detection and monitoring of urban growth using remote sensing and GIS techniques: a micro-level study. GeoJournal, https://doi.org/10.1007/s10708-020-10359-1. **Springer Publisher (Scopus).**

7. Das, S., Angadi, D.P. (2020). Spatio-temporal Analysis of Urban Functional Development and its zone of Influence: A Micro-Level Study of Barrackpore Subdivision, West Bengal. Urban India Vol 40 (II). Publisher- National Institute of Urban Affairs **(Scopus).**

8. Das, S., Angadi, D.P. (2021). Assessment and characterization of dust particles from tree leaves as an indicator of air pollution in urban local bodies: A case study on Barrackpore Sub-division, West Bengal. Indian Journal of Environmental Protection, Vol 41 (5), pp. 483-494. ISSN – 0253-7141. **(Scopus Indexed Journal).**

9. Das, S. (2021). Spatial variations in the level of development in Barrackpore Subdivision region, India: a micro-scale study using composite index and clustering approach. SN Social Sciences 1, 265. https://doi.org/10.1007/s43545-021-00271-x **Springer Publisher (Scopus).**

10. Das, S., Jain, G.V. (2022). Assessment and Prediction of Urban Expansion Using CA-Based SLEUTH Urban Growth Model: A Case Study of Kolkata Metropolitan Area (KMA), West Bengal, India. Journal of the Indian Society of Remote Sensing, 50. http://doi.org/10.1007/s12524-022-01602-y **Springer Publisher (Scopus).**

11. Das, S., Angadi, D.P. (2023). Appraisal of groundwater quality variation in the rural-urban division: a case study of Barrackpore sub-division, West Bengal. Sustainable Water Resource Management. **9**, 45. https://doi.org/10.1007/s40899-023-00822-5. **Springer Publisher (Scopus).**

12. Dhanaraj K., A Khujur, Das K. (2024). Exploring the dynamics interface of rural-urban transition through patch morphology in the medium-sized city of Mangaluru, India. Modern Cartography Series, Remote Sensing and GIS in Peri-Urban Research Perspectives on Global Change, Sustainability and Resilience, 11. https://doi.org/10.1016/B978-0-443-15832-2.00003-4 **(Elsevier Scopus).**
13. Das, S., Das, S., K, Dhanaraj. (2024). Dynamics of urban expansion and its impacts on land use changes at suburban fringe areas of Ranchi and Patna cities: a comparative study. Modern Cartography Series, Remote Sensing and GIS in Peri-Urban Research Perspectives on Global Change, Sustainability and Resilience, 11. https://doi.org/10.1016/B978-0-443-15832-2.00008-3 **(Elsevier Scopus).**

14. Mondal, D., K Dhanaraj, Das, S., Anand Subhash (2026). Urbanization and Thermal Footprints: Mapping Bangalore's Growth and UHI Evolution. AI and Remote Sensing for Earth Sciences. DOI: https://doi.org/10.4018/979-8-3373-8745-1.ch009.

Lecture/ Talk

Lecture / Session	Event	Organised by
Introduction of Digital Elevation & Hydrological Modelling	Tracing Landscapes of the Past: Geospatial Approaches to Archaeology & Heritage Research (22 Dec 2025 – 2 Jan 2026)	Heritage, Science and Society Programme, NIAS, Bangalore
Introduction of Digital Elevation & Hydrological Modelling	Landscape Through Time: Remote Sensing & GIS in Archaeology and Heritage Research (21st July - 1st August 2026)	Heritage, Science and Society Programme, NIAS, Bangalore
Introduction of Google Earth Engine		
Tracing the layered and often obscured history of Bangalore's urban evolution, using HGIS	Spatial Stories of Bengaluru's Historical Landscape	26 March 2026, Indian Institute of World Culture, Bangalore

References

Name	Designation	Organization
Dr. Sanjeev Sahu	Scientist- Electronics & Instrumentation	Indian Council of Agricultural Research – CIFRI
Dr. Gaurav Jain	Scientist / Engineer – SD,	Space Application Center, Ahmedabad
Dr. Dharmendra Singh	Senior Scientist (ENV/ Ecology)	Haryana Space Application Center
Prof. M.B. Rajani	Professor	School of Humanities, National Institute of Advanced Studies

Declaration

I hereby declare that the information furnished above is true and correct to the best of my knowledge and belief.

Sandipta Das.

Place: Kolkata,
Date: 08.05.2026