



VIRTUAL WORKSHOP ON  
**‘GIS APPLICATIONS IN SOCIAL SCIENCES’**  
13<sup>th</sup> – 14<sup>th</sup> May 2022

**Organized By:**  
Discipline of Humanities & Social Sciences &  
Archaeological Sciences Centre,  
IIT Gandhinagar, Gandhinagar, India

**ABOUT THE WORKSHOP**

The use of GIS in social science and humanities research can help to analyse and comprehend interactions and phenomena in a much better way. It offers a unique approach to the theory and application of social sciences with a range of modern spatial approaches. It explores how cartography alongside technological knowledge can engage with a variety of important societal issues through linking together GIS and spatial analysis and demonstrates the importance of applied GIS for solving real-world problems.

**Objectives:** The focus of the workshop, primarily, is to discuss how spatial and non-spatial data are handled in GIS, what the standard commands within GIS packages are, and what they can offer in terms of spatial and even temporal analysis (through remote sensing) to social science and humanities research.

**Approach/Deliverables:** We aim to cover a spectrum of elementary applications for which GIS has been primarily used in social sciences, offering a global perspective. The workshop will provide a range of modern applications of GIS with associated practical exercises to work through and demonstrate how researchers can use GIS to plan their research work more effectively. The workshop will be supplemented with keynotes from researchers who have pioneered GIS into social science, practical activities and datasets (three practical sessions on using google earth, making study area map and analysing and visualizing data set in GIS), followed by a discussion with workshop participants where the participants they would share present their ideas or queries about the use of GIS technology in their research and get some insights and inputs from our experts.

## **WORKSHOP SCHEDULE/DETAILS**

<b>DAY 1 (13th May 2022)</b>	
9:20 - 9.30 AM	Registration and welcome: Camellia Biswas and Ekta Gupta
9.30 - 10.00 AM	Introductory talk: Prof. Sharada and Prof. Prabhakar
10.00 - 11.00 AM	<b>Keynote: Prof. Pulak Das</b>
11.00 - 11:15 AM	Break and buffer time to set up for workshop
11.15 AM - 1.00 PM	Lecture on basics of GIS + Practical session I on Georeferencing
1.00 - 1.30 PM	Lunch Break
1.30 - 2.45 PM	Practical session II on Google Earth Pro
2.45 - 3.00 PM	Break
3.00 - 5.00 PM	Practical session III on Creating Geospatial data: Digitization
<b>DAY 2 (14<sup>th</sup> May 2022)</b>	
9.30 - 10:30 AM	Lecture and Practical Session IV: Spatial data integration and visualization
10. 30 - 11.30 AM	<b>Keynote: Dr M B Rajani</b>
11.45 AM - 1.00 PM	Lecture and Practical session V on Elements of Cartography
1.00 - 2.00 PM	Lunch Break
2.00 - 2.30 PM	Practical session VI on Map Composition, Design and documentation
2.30 - 4.45 PM	Flash/Oral presentation by participants and discussion
4.45 - 5.15 PM	Feedback and closing session

## **ABOUT THE KEYNOTE SPEAKER**

**Dr Pulak Das**, holds a BSc degree in geology and MSc degree in ecology. His doctoral thesis looked into geospatial analysis of lichen community ecology. He teaches remote sensing and GIS in the master's program of environment and development in the school of Human Ecology, Ambedkar University Delhi. His research interest largely involves understanding rivers, ecosystems, watershed, and people. He is recipient of Shastri Indo Canada Institute (SICI) fellowship as visiting faculty to Dalhousie University, Halifax, Canada.

**Dr. M.B.Rajani**, did her doctoral studies from NIAS, Bangalore was awarded PhD by University of Mysore (2011). She taught at NIIT University, Neemrana (2011-13), was a Fellow of Nalanda University (2013-14), Guest Faculty of IIT Gandhinagar (2014-16) and joined NIAS as a faculty member in 2015 (Currently an associate professor). Her research has two inter-related facets: analysing cultural landscapes using geospatial data to identify new features of archaeological interest, and advancing the usage of such analysis for preserving built heritage. Her work has therefore

expanded the field of archaeology to include the study of human impact on landscapes. Her work has been published and presented widely in reputed national and international forums.

### **ABOUT THE ORGANIZERS**

**Prof. Sharada C.V** is an Assistant Professor in the Humanities and Social science discipline (Archeological science center) of IIT Gandhinagar. She has a double doctorate from Deccan College Pune and the University of Ferrara, Italy. Her research primarily lies in the reconstruction of past human-animal and human- environment inter-relationships through the scientific study of bioarcheological remains. She has analyzed faunal remains from more than a dozen sites in India and Europe to delineate the sites' prehistoric and protohistoric animal utilization strategies and their taphonomic trajectories. Her analysis expertise in various GIS applications.

**Prof. V.N.Prabhakar** obtained his Ph.D. in Archaeology from Kurukshetra University, Haryana (India) and is presently Associate Professor (Archaeology), Indian Institute of Technology, Gandhinagar, Gujarat. He held the post of Director (Archaeology) in Archaeological Survey of India (ASI) before joining IIT Gandhinagar. His research interests are Harappan Civilization and Application of Sciences in Archaeology. He has conducted extensive research in the areas of bead manufacturing techniques of the Harappans from the site of Dholavira. His doctoral thesis was on Burial practices of the Harappans: Sanauli Excavations A Case Study, wherein a multifaceted analysis including stable isotope studies was conducted. He has conducted independent excavations at the Harappan site of Rupnagar (Punjab) and Karanpura (Rajasthan) in India and actively participated in the excavations at Dholavira (Gujarat), Lalkot (Delhi), Sanauli, Madarpur, Fatehpur Sikri (all in Uttar Pradesh), Ellora (Maharashtra). He has organized national and international conferences; workshops. He currently teaches and conducts research at IIT Gandhinagar, coordinating the application of sciences in archaeology.

**Ms Camellia Biswas** is a PhD student at the discipline of Humanities and social sciences, IIT Gandhinagar. Her thesis is based on the Political Ecology of climate disaster in Indian Sundarbans and how it reconstructs the human-wildlife relationship from a Participatory- GIS approach. It proposes a mixed-methodology with GIS and remote sensing to plan sustainable management of the Sundarban landscape by collaborating with the local communities. She has undertaken GIS and remote sensing courses in her masters and also been a Research Assistant at Ambedkar University Delhi, on a Remote Sensing based study of the built-up area dynamics as a measure of urban expansion, in Delhi and NCR.

**Dr Ekta Gupta:** Ekta Gupta is an Early Career Fellow at IIT-Gandhinagar. She conducted her Doctoral Research at the National Institute of Advanced Studies (NIAS), Bengaluru. She did M.Tech in Geographic Information System (GIS) from NIIT University, Rajasthan. She has been doing research on various applications of Remote Sensing (RS) and GIS. She has worked on RS and GIS based assessment of canal irrigation, and investigated changes in vegetation phenology in the arid Trans-Himalayan ecosystem of northern India using multitemporal Modis data. Since 2015,

she is primarily working on the application of historical cartographic documents, RS and GIS in archaeology and geomorphology.

**Resource Person: Dr Sonam** holds a PhD degree in the discipline of Earth Sciences of IIT Gandhinagar where she worked on River long profile evolution in varying tectoclimatic settings of the Indian subcontinent. She is currently working as a Research Associate at IIT Gandhinagar

Note: 20 participants are shortlisted for the workshop.