

# Curriculum Vitae

## Dr. Surya Deb Chakraborty

### Permanent Address:

45/12 Vivekananda  
Sarani, Garfa,  
Doctor Bagan, Haranath  
Vhaban  
P.O- Haltu, Jadavpur,



---

### Career Objective

To leverage my extensive knowledge and expertise in Remote Sensing and GIS to contribute to innovative projects, drive research in spatial analysis and modeling, and mentor the next generation of professionals in the field. My interests lie in human-environment interaction, climate change studies, and advanced remote sensing applications, including Thermal, Hyperspectral, Microwave SAR, and LiDAR. As a lifelong learner, I am committed to exploring new ideas and technologies to further enhance my contributions to this field.

---

### Education

- **Ph.D. in Geo-Engineering**  
National Remote Sensing Centre, Andhra University, Visakhapatnam  
2016 - 2021
- **M.Tech in Remote Sensing and GIS**  
Indian Institute of Remote Sensing, Andhra University, Dehradun  
2009 - 2011  
*First Class with Distinction*
- **Post graduate Diploma in Remote sensing and GIS**  
ECIT-ECIL, IBM, Jadavpur University, Kolkata  
2008 - 2009
- **M.Sc in Geography (Agricultural Geography)**  
Chatrapati Sahuji Maharaja University, Kanpur  
2005 - 2007
- **B.Sc in Geography (Cartography Specialization)**  
Calcutta University, Kolkata  
2002 - 2005
- **Higher Secondary**  
Jodhpur Park Boys High School, Kolkata, West Bengal  
2002
- **Secondary**  
Garfa DNM High School, Kolkata, West Bengal  
2000

---

## Area of Expertise

- **Remote Sensing:** Thermal, Hyperspectral, Microwave SAR, LiDAR
  - **GIS & Spatial Analysis:** Digital Image Processing, Heat Balance Modeling, Urban Remote Sensing, Climate Change
  - **Application Areas:** Watershed Monitoring, Agricultural Remote Sensing, Urban Heat Island (UHI) Studies.
- 

## Dissertation Summaries

### Ph.D. Dissertation:

- **Topic:** Urban Heat Redistribution in Bangalore: Impact of Land Use on LST and Ground Water Temperature
- **Summary:** Investigated the correlation between Land Surface Temperature (LST) and Ground Water Temperature (GWT) using Landsat data. The study revealed that urbanization, particularly the expansion of built-up areas, significantly increased LST and GWT, with an 80% correlation between the two. The findings emphasized the role of land use changes in exacerbating the Urban Heat Island effect, with GWT as a potential marker for assessing UHI strength.

### M.Tech Dissertation:

- **Topic:** Impact of Urbanization on Land Surface Temperature and Heat Fluxes in Delhi
  - **Summary:** Analyzed the effect of urbanization on LST and heat fluxes using Landsat and MODIS data from 2000 to 2010. The research highlighted increased surface temperatures and heat fluxes due to urban expansion, with MODIS recording higher temperatures due to its coarser resolution. The study established surface heat flux as an indicator of the UHI effect.
- 

## Field Experience

- **Panchmari, Madhya Pradesh (2004):** Geomorphological study, biodiversity documentation, socio-economic data collection. (*B.Sc Field Trip*)
- **Jaipur, Rajasthan (2005):** Socio-economic structure and urban growth study using GIS. (*M.Sc Field Trip*)
- **Vindaban, Uttar Pradesh (2006):** Urban growth and socio-economic analysis using GIS. (*M.Sc Field Trip*)
- **Delhi, India:** Ground verification for M.Tech dissertation on urbanization's impact on LST and heat fluxes.
- **Barambadi Watershed, Karnataka:** Soil moisture and crop growth monitoring using remote sensing instruments.
- **CHAMAN Project (Banana, Mango):** Field visits in Chamrajnagar, Kolar, and Tumkur for horticultural assessments.

## Technical Skills

- **GIS Software:** ArcGIS, ArcGIS Pro, ArcGIS Server, ArcGIS Portal, MapInfo, AutoCAD Map, eCognition Professional
- **Image Processing Software:** ERDAS IMAGINE, ENVI, ENVI SARscape, SNAP, IDRISI Andes, Global Mapper, NEST, PolSAR
- **Statistical Software:** SPSS, Basic R
- **General Software:** MS Office, Adobe Photoshop, Corel Draw, SFDC
- **Programming Languages:** Basic Python, SQL, Oracle, C, C++

---

## Work Experience

### My Current Role: Analyst at Mohammed Bin Rashid Space Centre Lab, Dubai University

I'm thrilled to be part of the **Data Analytics Team** at the **Mohammed Bin Rashid Space Centre Lab**, contributing to impactful initiatives in disaster management, monitoring, and AI tool development and capacity building in remote sensing and GIS.

### Key Responsibilities:

- ✓ **Disaster Management & Monitoring:** Leveraging geospatial data to analyze and predict disaster scenarios, enabling timely interventions.
- ✓ **AI Tool Development:** Designing innovative AI-based tools to enhance data interpretation and decision-making in remote sensing applications.
- ✓ **Collaborative Research:** Working with a team of experts to drive advancements in data analytics for environmental and urban challenges.
- ✓ **Training and capacity Building:** I design and implement comprehensive training programs in Remote Sensing and GIS. This includes developing structured training materials, preparing relevant datasets, and ensuring seamless execution of training sessions. My approach focuses on delivering practical, hands-on learning experiences to enhance participants' technical skills and understanding of geospatial technologies.

This role has allowed me to combine my passion for **Remote Sensing** and **GIS** with cutting-edge technology to address global challenges.

### Senior Analyst, Training Operation Team (Remote Sensing & GIS) | ESRI India

*Current: 06th November 2017 to December 2024 {7 years 3 months}*

- Deliver technical presentations and demonstrations on ESRI products.
- Provide training on ArcGIS Desktop, ArcGIS Pro, ArcGIS Online, ArcGIS Server, and ENVI SARscape.
- Developed and implemented vertical-specific strategies in collaboration with the sales team.
- **Metrics:** Achieved an average CSAT score of 4.8/5 across 300+ training sessions; scaled GIS training programs by 20% year-over-year.

### Senior Scientific Officer | International Crop Research Institute for Semi-Arid Tropics

*1st Jan 2017 to 1st September 2017 {10 Months}*

- Led remote sensing projects for dryland agriculture.

- **Metrics:** Reduced project turnaround time by 15% through the implementation of automated image processing workflows.

**Project Scientist (Remote Sensing and GIS Analyst) | NRSC, ISRO (National Remote Sensing Center, MNCFC)**

*10th February 2015 to 31st December 2016 {1 Year 10 Months}*

- Led the extraction of buildings, roads, and natural features as GIS layers using segmentation and object-based classification.
- Conducted GPS point collection, road map generation, and forest map creation.
- Digitized various land use and land cover types.
- Mapped horticultural plants, including Mango, Citrus, and Banana.

**Senior Research Fellow | Indian Institute of Science (IISc)**

*1st September 2012 to 24th January 2015 {2 Years and 9 months}*

Conducted research on soil hydraulic properties using agro-hydrological models and microwave remote sensing.

- Assisted in forest mapping for climate change impact studies.
- **Metrics:** Improved model accuracy by 10% through the integration of high-resolution remote sensing data.

**Project Scientist | ISRO ANTRIX Corporation Ltd.**

*17th June 2011 to 16th June 2012 {1 Year 1 Month}*

- Worked on Land Use/Land Cover (LU/LC) and NDVI mapping, as well as the creation of population and income maps.
- Led property assessment, monitoring, and reviewing the performance of direct reports, with a focus on monthly performance development.
- Prepared reports on the effects of SUJALA after its implementation.
- Resolved staff issues and conflicts at the first level, identifying and recommending staff development and training needs.
- Promoted teamwork by establishing strong relationships and trust within the team.
- Identified and recommended procedures and processes for more efficient, timely, and higher quality data collection.
- Conducted GPS and field recording training for new staff members.
- Worked on SUJALA Watershed Management Project for monitoring soil moisture and groundwater.
- **Metrics:** Successfully validated root zone soil moisture models, achieving a 90% accuracy rate in predictions.

**GIS Professional | WBSEDCL**

*7th July 2008 to 28th February 2009 {6 Month}*

- Created maps for Joynagar electric supply using GPS and GIS.
- Conducted GPS field surveys of the entire power network in Joy Nagar, including locating power transformers, distribution transformers, EHV towers, HV and M&LV lines, poles, and consumer details.
- Ensured the accuracy of all existing electrical installations within 1 meter relative to the base map.
- Performed quality checks for electrical and road networks, buildings, landmarks, land

- use/land cover, and political boundaries.
- Published map services using ArcGIS Server 10.1, overseeing quality assurance and validation of GPS data collection.
- Metrics:** Enhanced map accuracy by 25% through rigorous ground-truthing.

---

## Research Publications

### Journals

- Chakraborty, S.D., Patil, T.C., et al. (2013). *Impacts Of Sujala On Land Use /Land Cover Transformation And Socio-Economic Changes In Jonnikeri Watershed*. Asian Academic Research Journal of Multidisciplinary, 1(9), 68-78.
- Chakraborty, S.D., Kant, Y., Mitra, D. (2015). *Assessment of Land Surface Temperature and Heat Fluxes over Delhi Using Remote Sensing Data*. Journal of Environmental Management, 148, 143-152.
- Verma, P., Chakraborty, S.D. (2014). *Study of Spatial Variability of Ground Water Depth and Quality in Haridwar District*. IJAST, 2(4), 570-580.

### Book Chapters

- Chakraborty, S.D., Kant, Y., Reddy, K.M., Rao, P.J. (2022). *Investigation of Land Use and Landcover Changes and Its Relationship with Land Surface Temperature and Ground Water Temperature Over Bangalore City*. In *Remote Sensing and GIS for Policy Decision Support*, 219–233.
- Das, S., Ganguly, K., Mitran, T., Chakraborty, S.D. (2022). *Applications of Geospatial Technologies Toward Achieving Sustainable Development Goals*. In *Application of Remote Sensing and GIS in Natural Resources and Built Infrastructure Management*, Springer.

---

## Reports Published

- Chakraborty, S.D., Patil, T.C., & Manjula, B.V., Ranganath, B.K. *Impact Evaluation of Jonnikere Watershed, Aurad Taluk, Bidar District, Karnataka.*
- Chakraborty, S.D., Patil, T.C., & Manjula, B.V., Ranganath, B.K. *Impact Evaluation of Uddanur-Belthur Watershed, Kollegal Taluk, Chamrajanagar District, Karnataka.*
- Chakraborty, S.D., Patil, T.C., & Manjula, B.V., Ranganath, B.K. *Impact Evaluation of Keralli Watershed, Shirahatti Taluk, Gadag District, Karnataka.*
- Chakraborty, S.D., Patil, T.C., & Manjula, B.V., Ranganath, B.K. *Impact Evaluation of Kyatanakeri Watershed, Indi Taluka, Bijapur District, Karnataka.*

---

## Workshops

- Training Course on Microwave Remote Sensing Application**  
National Remote Sensing Centre (NRSC), Indian Space Research Organization (ISRO), Hyderabad  
25th September - 5th October, 2012

Participated in a specialized training course focusing on microwave remote sensing techniques and applications.

- **Training Course on Glacier Studies, Climate Change, and Remote Sensing**  
*Divecha Centre for Climate Change, Indian Institute of Science, Bangalore*  
*4th March - 15th March, 2013*  
Selected for a training course centered on glacier studies and the impact of climate change, utilizing remote sensing technologies.
- **Training Workshop on Hyperspectral Remote Sensing for Agriculture**  
*Division of Agricultural Physics, Indian Agricultural Research Institute, New Delhi*  
*18th February - 28th February, 2013*  
Attended a workshop dedicated to the application of hyperspectral remote sensing in agriculture.
- **Indo-French Workshop on Water Resources Management Using Microwave Remote Sensing**  
*Indian Institute of Science, Bangalore*  
*13th November, 2013*  
Participated in a workshop co-hosted by the Indo-French Cell for Water Science, focusing on the management of water resources using microwave remote sensing.
- **SELTAR Workshop on Sustainability of Soil and Water Management in Asia: LUC and CC in Question (SWUA)**  
*Indian Institute of Science, Bangalore*  
*4th - 6th December, 2013*  
Attended a workshop on the sustainability of soil and water management in Asia, co-hosted by the Indo-French Cell for Water Science.

---

## Teaching Experience

- **Visiting Faculty | Kazi Nazrul University, Asansol, West Bengal**  
*Sep 2017 - 2019*
- **Guest Lecturer | Various Institutions**
  - Delivered over 300 lectures on advanced remote sensing, GIS, and environmental modeling across multiple institutions, including IIT, IISc, research and Private organization around the India.
  - **Metrics:** Consistently received high ratings (4.9/5) from participants for clarity and engagement in teaching.

---

## Awards and Honors

- **Young Scientist Aspirant Fellowship**  
Karlsruhe Institute of Technology, Germany (2015)
- **Pat on Back Award**  
ESRI India (Q2 2021, Q3 2021)
- **Technovator Award**  
ESRI India (Q4 2022)
- **Valuable Player Award**  
ESRI India (Q2 2024)

---

## Personal Information

- **Date of Birth:** 23rd December 1985
- **Nationality:** Indian

- **Marital Status:** Married
- **Languages:** English, Hindi, Bengali
- **Address:** 45/12 Vivekananda Sarani, Garfa Doctor Bagan, Haranath Bhaban, Kolkata - 700078
- **Mobile:** +91 8861176547

- **Email:** suryatoy37@gmail.com
- 

## References

- **Dr. Yogesh Kant**  
Scientist 'SE', Marine and Atmospheric Science Division, Indian Institute of Remote Sensing, ISRO  
*Email:* yogesh@iirs.gov.in  
*Phone:* +91 135 2524228
  - **Dr. N.H. Ravindranath**  
Professor, Center of Sustainable Technology, Indian Institute of Science, Bangalore  
*Email:* ravi@ces.iisc.ernet.in  
*Phone:* +91 80 2360 1455
  - **Dr. Bhavana Sahay**  
Scientist SE, Agricultural Science Division, National Remote Sensing Center, ISRO  
*Email:* bhavana.s@nrsc.gov.in  
*Phone:* +91 40 2387 3877
- 

## Important Links

- **LinkedIn:** [www.linkedin.com/in/dr-surya-deb-chakraborty-20013922](https://www.linkedin.com/in/dr-surya-deb-chakraborty-20013922)
  - **YouTube:** <https://www.youtube.com/channel/UCEUQgXYkBXyE9xMWYVTarew>
  - **Facebook:** <https://www.facebook.com/profile.php?id=100089464209421>
  - **ResearchGate:** <https://www.researchgate.net/profile/Surya-Chakraborty>
- 

## Declaration

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

**Place:** Kolkata

**Date:** 09.08.2024



(Surya Deb Chakraborty)