

CURRICULAM VITAE

Surajit Bera

Technical Associate at Forest Survey of India

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Qualification: M.Sc in Remote Sensing & GIS.

Total Experience: Nine years in the field of Remote Sensing & GIS.



Carrier Objectives

Remote Sensing & Geographic Information System professional with over nine years' experience applying RS & GIS technique in different field of scientific analysis, improve information management and developed decision support system. I am highly motivated; work very peacefully with timely delivered. I am able to work with different types of RS & GIS software with ESRI products and Open Source software.

Professional Summery

Natural Resource Monitoring & Management:

Forest Management:

- Density wise forest cover mapping with the help of different satellite imagery.
- Species based Forest Type Mapping using different satellite imagery in Indian context.
- Demarcation and Mapping of forest boundary with the help of DGPS survey.
- Forest Biomass estimation using satellite data (Optical & Microwave) and Ground data.
- Monitoring of Forest loss due to Natural hazard and Socio-economic activity.

Water Management:

- Volume of Surface (runoff & storage) water and Groundwater calculation based on RS & GIS and rainfall data.
- Groundwater modeling using Modflow software based on Field data and ancillary data.
- Watershed management for agriculture improvement and water drainage study for industrial development.
- River and drainage mapping using Satellite imagery, DEM imagery and Toposheets.
- Suitable site selection for DAM, Check DAM and Rainwater harvesting storage.
- Flood management due to rainfall water during the rainy season.
- Site demarcation for Canal or Drainage construction.

Soil Management:

- Soil map creation and update of soil map according to available ancillary data.
- Soil distribution mapping using value of soil dissolved material.
- Soil loss estimation in a particular DAM / surface water storage using SWAT tool and RUSEL Model.

Environmental Monitoring:

- Air pollution monitoring using PM-10, PM-2.5 data collection.
- Noise pollution monitoring using Noise Level Meter.
- Different EIA & EMP report creation.

Socio-Economic Development:

Rural and Urban Development:

- Demarcation of Urban sprawl area using different modeling technique.
- Suitable site selection for different facilitate service for Rural & Urban Development.
- Road network analysis and road map creation based on shortest distance calculation
- Solid waste management and dumping site selection in Rural & Urban area.

- DGPS survey to create mine plan and community development of Coal mining area.

Fishery Development:

- Inland waterbody mapping using different satellite imagery for fishery development in North-East India.

Confidential Work & Database Management:

- India-Bangladesh Border area management using GIS technology.
- 2D and 3D mapping based on real world feature of Earth surface.
- Database management using SQL and Terra explorer software.

Training & Academic Guidance:

- Served as a GIS trainer in Border Security Force, India.
- GIS teaching for National & International students & professionals.

Details of Working Experience

Organisation: Forest Geoinformatics Division, Forest Survey of India- Dehradun, India.

Designation: Technical Associate.

Duration: 02-April-2018 to till date

Role & Responsibilities:

- Forest Type Mapping and Forest cover mapping of India using different satellite imagery & ancillary data and field data to create vegetation types and vegetation cover thematic maps of India followed by advance digital image processing (spectral & object based classification) method.
- SAR (Sentinel-1) data processing: Image correction, image enhancement, ortho rectify, image classification and DEM image generating using SAR Data further data used to forest biomass estimation in India.
- 3D analysis on Arc Scene software using DEM image for surface undulation extraction further apply to prevention of forest loss area from natural hazard and sustainable development of forest loss area.
- Crown Cover area estimated using Very High Resolution (Triplesat-0.8m) Data on E-Cognition software followed by Object Based Classification method for Biomass Estimation of Karnataka & Maharashtra state of India.
- Monitoring of Forest losses area of India using different satellite imagery and thematic maps in last five years provided by NRSC, Hyderabad.
- Collection of Forest Type, forest cover, Biodiversity & Forest Inventory data from field based on random sampling points according to forest types group of India.
- Collection of Drone data from field and analysis the collected data for forest resource monitoring & forest fire monitoring.
- Different Technical Paper presentation of Remote Sensing & GIS Application in Forestry.
- Attend different Training programme in Remote Sensing and GIS Application in Forest Resource Monitoring & Forest Fire Prevention.

Organisation: Department of Natural Resource & Environment Management, CSIR- Central Institute of Mining & Fuel Research- Dhanbad, India.

Designation: Project Assistant, L-II (GIS Analyst).

Duration: 03-January-2014 to 15-March-2018

Role & Responsibilities:

- Different thematic maps & Geodatabase generated using satellite image, topo sheets, field data & Google image for EIA/EMP, Watershed Management, Groundwater modeling, geo-hydrological analysis, natural resources management & sustainable rural and urban development.
- Forest resource monitoring using different satellite images for Environmental Impact Assessment (EIA) & Environmental Monitoring Plan (EMP).

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- Cadastral mapping using high-resolution data, cadastral maps & DGPS survey data for Land and Property Resource Management, Mine plan generation & sustainable mining development.
 - 3D feature Analysis in Arc Scene using DEM Images for geo-hydrological analysis, flood hazard prevention on industrial area for sustainable mining development on rainy season.
 - Geo-statistical Analysis on different hydrological, rainfall and ground water data & create different zonation (Isopleth) thematic maps according to problematic solution purpose.
 - Watershed Management & sustainable watershed development planning according to available rainfall runoff water on a particular river basin.
 - Online GIS Mapping on Arc GIS satellite images using Arc GIS software for updating LU/LC layers in mining area in India.
 - Rural & Urban Development planning using spatial and non-spatial (satellite imagery, DGPS, GPS & Census) data on GIS platform for Database Generation, Survey map making & sustainable Rural and urban (community) development of mining area in India.
 - Groundwater Modeling and calculate available groundwater of a particular region for industrial need and extend mining below the groundwater level using Modflow Software.
 - Rainfall harvesting site suitability analysis & design rainfall harvesting pond using different data overlay analysis and available surface runoff water on rainy season of particular region for industrial need.
 - Client Management & Technical Presentation at Client Locations for project implementation and project executing.
 - Project Report Writing and different papers published in online journal and seminar.
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Organisation: BSF GIS Lab, RSI Softech India Pvt. Ltd & Border Security Force- Silchar, India.

Designation: Geospatial Application Engineer.

Duration: 15-April-2013 to 17-December-2013

Role & Responsibilities:

- GIS Trainer in Indian Border Security Force (BSF); Trained Non-GIS peoples in BSF for creating different maps, understanding GIS technology and GIS application in real-world.
 - 2D Mapping of India-Bangladesh Border area of North-East India for better representation of Border area and base layer generated for national security purpose.
 - Different 3D real world model created on GIS platform based on surface features for sustainable border area development.
 - Database Management of India-Bangladesh border area using ORACLE 10g (Spatial).
 - Implement the Defense Projects for BSF, Army, and Police; Support and maintenance of BSF GIS Project in North-East India and provided maintenance for military intelligence units in imagery intelligence teams under DGMI/ MI-17.
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Organisation: Department of Zoology & Remote Sensing & GIS, Vidyasagar University- Midnapore, West Bengal, India.

Designation: Project Assistant

Duration: 05-June-2012 to 11-April-2013

Role & Responsibilities:

- Inland water body base map generation using different Satellite Images and topo sheets for inland fishery development in North-East India.
 - Create geodatabase (spatial & non-spatial) of a particular surface features on earth for inland fishery development in govt. & private land.
 - Spatial & non-spatial Database generation & data management for project implementation.
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Experimental Work:

- LiDAR (Point Cloud) data processing on Micro Station (Terra Solid) software for forest area mapping- A case Study of FRI Campus, Dehradun.
- LiDAR (Point Cloud) data processing on Micro Station (Terra Solid) software for urban area demarcation and building height measurements.

Details of Education

Institute	Course	Board	Year	%
Vidyasagar University	M.Sc (Remote Sensing & GIS)	Vidyasagar University	2012	77.00
Panskura Banamali Collage	B.A. (Geography Hons.)	Vidyasagar University	2010	56.64
S.S.S.V	Higher Secondary (12th)	W.B.C.H.S.E	2007	67.40
	Secondary (10th)	W.B.B.S.E	2005	52.75
*Achievement: M.Sc 1 st Class Second (Silver Medal)				

Technical Skills

Remote Sensing – MS: Erdas Imagine 8.5 to 2013, LPS 2010, PCI-Geomatica 9.0,10.

Remote Sensing – HS: SARSCAPE, ENVI. E-Cognition.

GIS – 2D: ArcGIS 10.3, Arc Info 10.3, MapInfo 12, Q-GIS, Super GIS, Elsyal Smart GIS.

GIS – 3D: Arc Scene 10.3, Arc Globe 10.3, Terra Explorer Pro, Terra Plus, BSF GIS, Micro Station (Terra Solid).

GIS – Mobile: Arc PAD, Super Pad.

Photogrammetry: LPS

Web Technologies: Google Earth Engine

CAD: AutoCAD, Google Sketch up

Database: SQL, ORACLE 10g (Spatial).

Programming: Python 3.3.

Ground Water Modeling: Visual Modflow, Geostudio

Others: Arc FM, Google Earth Pro, PSP, Corel Draw, Surfer, Universal Map Downloader.

MS Technologies: MS Office Complete Package and Visual Basic 6.0.

Area of Specialization

Area of Work: Forest Resource Mapping & Monitoring, Water & Land Resources Management, Cadastral Mapping, Ground Water Modeling, DGPS Surveying, 2D Mapping, 3D Mapping, EIA, EMP, Geo-Hydrology. Rural & Urban Development, Forest Cover Mapping, Forest Types Mapping, Forest Biomass Estimation, SAR Data Processing & Very High Resolution Data Processing.

Instrumental Skills

Geographical Positing System (GPS), DGPS, Drone Camera, Total station, Theodolite, Prismatic Compass, Stereoscope, Environtech High Volume Sampler (PM 2.5 & PM 10), Hygrometer, Water Level Meter, pH Indicator, Noise Level Meter, Spectrometer.

Conference & Training Highlights

1. Training Programme on Drone mapping for forest resource monitoring, Forest Survey of India, Dehradun- Feb, 2019.
2. Training Programme on SAR Data Processing using ERDAS Radar Analyst Tool at Forest Survey of India, Dehradun- Oct, 2018.
3. Training Programme in Google Earth Engine, Forest Survey of India, Dehradun-May, 2018.
4. National Conference on Coal Mine Environment and Its Management, Katras College, Katrasgarh-July, 2017.
5. UGC-CPE Sponsored Short Term Course on Geoinformatics- Bankura, March, 2016.

6. *National Short Term Training Programme on Advance in Geology and Geotechnical Engineering, IIT (ISM), Dhanbad - Feb, 2016.*
7. *International Seminar on Environmental Engineering, IIT, BHU (Dept. of Mining Engineering), Varanasi- Feb, 2014.*
8. *International Seminar on Indian Society of Remote Sensing- New Delhi- Dec, 2012.*
9. *Training Programme in Erdas Imagine, Forest Survey of India, Dehradun-April, 2018.*
10. *Training Programme in Field Botany and Preservation at Botanical Survey of India, Dehradun-May, 2018.*
11. *Training Programme on Field data Collection for Total Forest Inventory in India, Forest Survey of India, Dehradun- Oct, 2018.*

Project Highlights

1. *Forest Cover Mapping of India using LISS-III satellite imagery, Forest Geoinformatics Division, Forest Survey of India Dehradun, India (Ongoing).*
2. *Revisiting of Forest Type Mapping of India using Sentinel-II, LISS-III & Landsat-8 Data, Forest Geoinformatics Division, Forest Survey of India Dehradun, India (2018-2020).*
3. *Object Based Classification using Very High Resolution Data for Forest Biomass Estimation (2017-2018).*
4. *Hydro-geological Study for Kasta East Coal Block of WBPDCCL at Birbhum District, Raniganj Coalfield-India (2017-2018).*
5. *Hydro-Geological Study for Singsar Limestone Mine of M/S Ambuja Cement Limited, Gujarat, India, (2016-2017).*
6. *Forest Cover Change Analysis Based on Remote Sensing & GIS of West Singhbhum District, Jharkhand, (2017).*
7. *Land Suitability Analysis for Agriculture Using Remote Sensing and GIS in Purulia District, (2017).*
8. *Drought Monitoring Using Remote Sensing and GIS Techniques in Purulia District-West Bengal, (2016-2017).*
9. *Land Use Land Cover Change Monitoring With the Help of GIS and Remote Sensing in Ranchi City, India, (2016-2017).*
10. *Multi Criteria Analysis For Flood Risk Assessment Using Remote Sensing & GIS Technique Of Damodar River Basin, (2016-2017).*
11. *Ground Water Prospect Mapping Using Remote Sensing and GIS Technique in Kodarma District Of Jharkhand, (2016-2017).*
12. *Land Use / Land Cover & Forest cover mapping of Cluster-1 & Cluster-2, Eastern Coalfield Limited, Raniganj Coalfield Area, (2016-2017).*
13. *Suitable site selection for rain water harvesting at UCIL Copper mine, Turamdih, Jharkhand, (2016).*
14. *Rural Development & Regional planning using Remote Sensing & GIS in Dhanbad District, (2016).*
15. *Delineation of ground water potential zones in Dhanbad district, Jharkhand, using Remote Sensing and GIS techniques, (2016).*
16. *Suitable Site Selection for Urban Solid Waste Management using GIS Technique in Dhanbad Block, Jharkhand, India, (2016).*
17. *Vegetation Cover Mapping Using NDVI, PVI, LAVI Model in Jharia Coalfield Region, (2015-2016).*
18. *Environmental Impact Assessment of BCCL Mining Area at Jharia Coalfield, Jharkhand, (2014-2016).*
19. *Feasibility Study for Installation of Sewage Treatment Plant for TATA Group of Collieries, Dhanbad, Jharkhand, (2014-2016).*
20. *Site Suitability Analysis For Solid Waste Dumping Using Remote Sensing & GIS Techniques in Ranchi City, Jharkhand, (2015).*

21. *Urban Sprawl Mapping with the help of Remote Sensing and GIS of Ranchi City, Jharkhand, (2015).*
22. *Ground Water Prospect Zonation Mapping using Remote Sensing & GIS Approach at Purulia District, West Bengal – India, (2015).*
23. *Land Use / Land Cover Change analysis in Jharia Coal Field, (2015).*
24. *Geological structure basis Ground water level mapping & control of salinity on ground water in NCR Region of India, (2014-2015).*
25. *Hydrology and Area Drainage Study of Integrated Cement Plant, Maihar, Near Village Bharauli, Tehsil Maihar, District, Satna, M. P. (2014-2015).*
26. *Hydrology and Area Drainage Study For Proposed Grinding & Ready Mix Concrete Unit, Butibori Industrial Areas, Midc, Nagpur, Maharashtra, (2014-2015).*
27. *Environmental Impact Assessment of Digwadih, Velatand & Kenduadih Mine, TATA Steel Limited, (2014).*
28. *Rain water harvesting in Surda, Kenadih copper mine region at Ghatshila, Jharkhand, (2014).*
29. *Land Use / Land Cover Mapping in Chitargarh Fort, Rajasthan, (2014).*
30. *Hydrological Study of Rakha Mine, Hindustan Copper Limited, East Singbhum, Jharkhand, (2014).*
31. *Indian-Bangladesh Border Security development & BSF GIS Trainer in four states of North-East India, (2013).*
32. *Germplasm Resource mapping & Ornamental Fishery development Seven State of North-East India, (2012-2013).*
33. *Coal fire detection & Monitoring related to Land Use/ Land Cover change using Remote Sensing & GIS (2012).*

Published Papers Highlights

1. Bera S, Ghosh A, Ahmad M, Singh K B, (2014). "Coal fire detection and monitoring related to land use change using remote sensing & GIS- A case study of Raniganj Coalfield", *International Seminar, IIT, BHU, Feb-2014, ISBN:978-81-87760-20-7, Page No: 655-668.*
2. Bera S, Ahmad M, Kumar A, (2016). "Suitable Site Selection for Urban Solid Waste Management using GIS Technique- a Case Study of Dhanbad Block", *International Research Journal of Engineering and Technology (IRJET)- Volume-3, Issue-7, July-2016 (Page No: 1600-1605), e-ISSN:2395-0056, p-ISSN:2395-0072.*
3. Bera S, Ahmad M, (2016). "Delineation of ground water potential zones in Dhanbad district, Jharkhand, using Remote Sensing and GIS Techniques" *International Research Journal of Engineering and Technology (IRJET)- Volume-3, Issue-7, July-2016 (Page No: 1607-1615), e-ISSN:2395-0056, p-ISSN:2395-0072.*
4. Bera S, Ahmad M, Raza R, (2016). "Suitable Site Selection for Sustainable Urban Development Planning with the Help of Remote Sensing and GIS", *International Journal of Innovative Research and Advanced Studies (IJIRAS) Volume 3, Issue 9, August 2016 (Page No: 56-62), ISSN: 2394-4404.*
5. Bera S, Ahmad M, (2016). "Site Suitability Analysis Using Remote Sensing & GIS for Rain Water Harvesting" *International Journal of Geology, Earth & Environmental Science (JGEE), Vol. 6 (2) May-August, 2016, pp. 101-110, ISSN: 2277-2081.*
6. Bera S, Bhandari A, (2016). "Assessment of Flood Hazard Zone Using Remote Sensing & GIS – A Case Study of Subarnarekha River Basin", *International Journal of Science and Research (IJSR), Volume-5, Issue-9, September-2016. ISSN (Online): 2319-7064. Page No: 1607-1612.*
7. Bera S, Ahmad M, Dey M, (2017). "Satellite Image Based Study for Land Use Land Cover Changed Due to Mining Activity during (1987 to 2011) at Dhanbad District of Jharkhand" *International Journal for Scientific Research & Development (IJSRD), Vol. 4 (12) Feb-2017, pp. 962-965, ISSN: 2321-0613 (Online).*

8. Singh R S, Singh R K, Bera S, (2017). "Impact of Mining on Herbaceous Ground Cover and Wild Fauna in Birsha- Damoh Forest Range Of Malanjkhand Copper Mines of India" *Eurasian Journal of Forest Science*, June-2017, 5(1): 1-7.
9. Kumar A, Tiwary R. K, Mondal M. R, Bera S, Singh R. K, Sinha S. K. (2017). "Need of Sewage Treatment Plant for Residential Colonies of Coal Mining Areas – A Case Study of Tata Group of Colonies, Jamadoba". *National Conference on Coal Mine Environment and its Management*, Katras College, Katrasgarh.
10. Bera S, Ahmad M, Suman S, (2017). "Land Suitability Analysis for Agricultural Crop using Remote Sensing and GIS - A Case Study of Purulia District". *International Journal for Scientific Research & Development* | Vol. 5, Issue 06, 2017 | ISSN (online): pp. 2321-0613.
11. Bera S, (2018). "Delineation of Ground Water Prospect Zone in hard rock terrine part of Purulia District of West Bengal-India using Remote Sensing & GIS Approach". *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, Volume 3 (1), pp. 1961-1970.
12. Bera S, Ahmad M, Kumari A, (2018). "Using Remote Sensing and GIS Techniques for Drought Monitoring of Purulia District, West Bengal-India", *International Journal of Creative Research Thoughts (IJCRT)*, Volume 6 (1), pp.707-717.
13. Bera S, Ahmad M, Prakash A, (2018). "Forest Cover Change Analysis Based on Remote Sensing & GIS of West Singhbhum District, Jharkhand", *International Journal for Research in Applied Science & Engineering Technology (IJRASET)*, Volume 6 (V), May 2018, pp.1039-1050.
14. Bera S, Ahmad M, Lal P, (2018). "Site Suitability Analysis for Solid Waste Dumping in Ranchi City, Jharkhand Using Remote Sensing and GIS Techniques", *i-manager's Journal on Civil Engineering*, Vol. 8(2), pp. 26-34.
15. Bera S, Ahmad M, Kumar A, (2018). "Urban Change Monitoring with the Help of Remote Sensing and GIS of Ranchi City, Jharkhand", *Khoj: An International Peer Reviewed Journal of Geography*, Vol. 5 (1), pp. 42-52.
16. Bera S, Ahmad M, Prasad A, (2018). "Multi Criteria Analysis for Flood Risk Assessment using Remote Sensing & GIS Technique- A Case Study of Damodar River Basin", *i-manager's Journal on Future Engineering Technology*, pp. 67-74.

Other Details

Father Name: Nimai Ch Bera
Date of Birth: 03-February-1989
Gender: Male
Cast: General
Nationality: Indian
Marital Status: Married
PAN Card: BGXPB6752N
Passport: Z3380635
Aadhaar No: 622930359462
Linguistic Abilities: English, Hindi and Bengali

Hobbies

Internet Surfing, Listening Music, Playing Football, Cricket & Badminton, Social Works Related to Environment & Education.

Life Moto

Life is a short span of time, so learn all the good things and creativity work of the legends. Because, knowledge cannot be stolen by anyone. It is precious than anything in the world.

References

- R. Arun Kumar (IFS), Deputy Director, Forest Survey of India, Dehradun, India. Email: jubatus06@gmail.com.

- *Dr. Anjanee Kumar, Principal Scientist, CSIR-Central Institute of Mining & Fuel Research, Dhanbad, India. Email: anjanee2003@yahoo.co.in*
- *T. Srinivas Rao, MD – RSI Softech India Pvt. Ltd, Hyderabad, India, Email: srinu2025@gmail.com*
- *Dr. Jatisankar Bandyopadhyay, Assistant Professor, Dept. of Remote Sensing & GIS-Vidyasagar University, Midnapore, India, Email: jatiban@gmail.com.*

Declaration

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

Thanking You

Your Faithfully



Place: Dehradun

Surajit Bera