

# PROF. MURALI KRISHNA GURRAM

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## GIS TECHNOLOGY & SPATIAL DATA SCIENCE & LOCATION INTELLIGENCE & DATA ANALYTICS – SUSTAINABLE URBAN & NATURAL & ENVIRONMENTAL RESOURCE MANAGEMENT AND CLIMATE CHANGE APPLICATIONS PROFESSIONAL

Theoretical & Applied Research & Field Experience

A dynamic, highly enthusiastic and motivated individual offering outstanding analytical, research, strategic-development/implementation, organisational, troubleshooting and managerial skills in the field of Spatial Data Science Spatial Information Technology, Location Intelligence & Surveillance Applications in Urban, Natural & Environmental Management and Geoscience areas supported by a solid and successful 26years record of accomplishment.

- ✓ Currently serving as **Adjunct Professor** with the Department of Geo-Engineering & RDT, College of Engineering, Andhra University on Geospatial Technology Development and Environmental Applications.
- ✓ Contributed as **Sr. Academic Fellow** at Environmental Tech Division, School of Industrial Technology, Universiti Sains Malaysia spearheading R&D on Geospatial and Environmental Applications.
- ✓ Served '*National University of Singapore*' as **Senior Research Faculty / Scientist – Geospatial Analytics** and lead R&D in Spatial Data Analytics, Urban Environment, Climate Change, Public Health and Spatial Epidemiology.
- ✓ Worked as **Head, GIS Technology & Applications** at '*Xinthe Technologies*' and led the development of unique products for Real Estate, e-Governance, Urban, Environmental, Navigation and Mapping applications.
- ✓ Served '*COWI India*' at the capacity of **Assistant Vice President** and was full charge of Research & Development (R&D), Presales, Quality and Project Management.
- ✓ Full-charge of GIS Technology & Mapping & Environmental services which include, presales, project bidding, techno-commercial proposal development, presentations, etc.
- ✓ Successfully lead R&D operations at '*Navionics Technologies*' and played a crucial role in implementing open source at enterprise level. Instrumental in developing solutions for Navigation and Land base products.
- ✓ Was responsible for setting up of GIS Division at '*Roulac India Investment Advisory*' from scratch and made it success by delivering various investing, retail, real-estate and insurance projects of international reputation.
- ✓ Principal architect of Xinthe's [www.propertydreamz.com](http://www.propertydreamz.com) first of its kind portal developed for RealEstate sector using map analytics / intelligence for informed decisions. Instrumental in developing Roulac's place performance models, enterprise retail and Real-Estate site selection, WebGIS information products.
- ✓ Designed and delivered various agricultural productivity, commodity information mapping and GIS analytical applications for reputed clients.
- ✓ Key member of large-scale Photogrammetry and Municipal GIS project successful executed by '*RoIta India*' for Dubai Municipality.
- ✓ Expert in delivering real-time solutions for 'urban growth & risk & environmental quality, sustainable development, 'liveability indices', 'settlement dynamics', 'land use/land cover and climate change', 'cat modelling', 'natural resource management', 'watershed management', 'agro-ecological zoning', 'irrigation planning' 'disaster management', 'coastal wetland / river delta evolution and environmental change', 'coastal erosion', 'real-estate', 'retail-site selection', 'insurance', 'navigation', 'healthcare', 'infrastructure', '2D cadastre', '3D mapping (photogrammetry & LiDAR)', 'infrastructure / utilities (water, power, telecom) etc.
- ✓ Conceptualized various image-processing methodologies/algorithms for retrieval and analysis of spatial data from remote sensing data products such as IRS - LISS-III/LISS IV/IKONOS/World View etc.
- ✓ Got recognition as "Best Researcher" and ranked top among the group of internationally acclaimed GIS & Remote Sensing scientists for a pilot project on natural & environmental resource management from Centre for Space Science and Technology Education in Asia & Pacific (CSSTEAP), affiliated to United Nations.

### CAREER PROFILE

Organisation	Designation	Duration	
		From	To
Dept. of Geo-Engineering, Andhra University, Vizag	Adjunct Professor	Jan., 2023	Till Date
Geo-Silicon Technologies, Hyderabad	Director, Geospatial Technology	Aug., 2022	Dec., 2022
Universiti Sains Malaysia, Penang, Malaysia	Senior Academic Fellow	Aug., 2021	Jul., 2022
National University of Singapore, Singapore	Senior Research Faculty / Scientist – Geospatial Analytics	Jul., 2019	Jul., 2021
Xinthe Technologies Pvt. Ltd., Visakhapatnam	Head, GIS Technology	May, 2014	Apr., 2019

COWI India Pvt. Ltd., Gurgaon	Assistant Vice-President /R&D - Technology Processes & PreSales	Jun. 2011	Apr., 2014
Navionics Technologies Pvt. Ltd., Hyderabad	Sr. Manager – Technical, R & D	Nov. 2009	May, 2011
Castle Consulting India, Hyderabad	Sr. Consultant	Jun 2009	Nov. 2009
Roulac India Investment Advisory Pvt. Ltd., Hyderabad	Sr. Manager (Sr. Place Analyst)	Apr. 2006	May. 2009
Rolta India Pvt. Ltd, Mumbai	Sr. Executive	Jan. 2004	Mar. 2006
Dept. of Geo-Engineering & RDT – Center for Remote sensing, Visakhapatnam	Research Fellow - GIS & Remote sensing	Jul. 2002	Dec. 2003
Centre for Space Science Technology Education in Asia and Pacific, Affiliated to United Nations, DehraDun	Officer Trainee	Oct. 2001	Jun. 2002
RRSSC (N), ISRO, Govt. of India & Dept. of Geo-Engineering & RDT, Andhra University.	Sr. Research Fellow - GIS & Remote sensing	Apr. 1997	Sep. 2001

### ACADEMIC QUALIFICATIONS

- ⇒ **Ph.D.** Spatial Information Technology, JNTU, Hyderabad (2016).
- ⇒ **Doctorate** in Management Studies, IIBMS, Mumbai (2009).
- ⇒ **Executive Certification in Data Analytics**, IIM, Raipur (2019)
- ⇒ **MBA**, Sikkim Manipal University, Manipal (2010).
- ⇒ **M.Sc.-IT**, Kuvempu University, Shankarghatta, Shimoga (2009).
- ⇒ **M.Tech.** GIS & Remote Sensing, from Andhra University & CSSTEAP, affiliated to United Nations (2003).
- ⇒ **P.G. Diploma** GIS & Remote Sensing, CSSTEAP, affiliated to United Nations (2002).
- ⇒ **M.Phil.** GIS & Remote Sensing (Coastal Zone Management), Andhra University, Visakhapatnam (1999).
- ⇒ **M.Sc.** Geography, Andhra University, Visakhapatnam (1997).
- ⇒ **B.Sc.** Geoscience, Nagatjuna University, Guntur (1994).
- ⇒ **Certified Project Management Professional Programme**, IIT, Delhi. (2010)
- ⇒ **PMI's Certified Associate in Project Management (CAPM)**
- ⇒ **Qualified as Certified Reseller of Digital Globe's High Resolution Image (HRI) products.**  
\*\*Qualified CSIR/UGC, Govt. Of India NET - Lectureship with 4<sup>th</sup> Rank (2009) at national level.

### PATENTS

1. Intelligent System and Method of Digital Allocation of Ore Waste Zones, Gradation and Its Management; Patent Application No. 201841035851

### TECHNICAL & PROJECT MANAGEMENT EXPERTISE

#### Project Management & Lead:

- ⇒ Spearheading Urban Environmental, Climate Change, Public Health and Spatial Epidemiology applications @ NUS, Singapore.
- ⇒ Led Technology Development, Information Product, R&D and Business operations at Xinthe Technologies.
- ⇒ Principal architect of Xinthe's **PropertyDreamZ.com** an online real-estate portal.
- ⇒ As Chief Project Manager, lead different project teams of varied sizes ranging from 10 to 250 members.
- ⇒ Handled full charge responsibilities for evaluating and implementing business strategy with emphasis on plan, processes, technology architecture and project management.
- ⇒ Expert in business proposals, technical documents, project effort & resource estimates, client communication etc.
- ⇒ Instrumental in developing Automated Mapping and Municipal Management Systems.
- ⇒ Very good in vendor sourcing and management.
- ⇒ Highly skilled in providing strategic direction to team, in terms of its structure, process, metrics, skills, resource and communication plan.

#### Geographical Information Systems and Analysis:

- ⇒ Fully abreast with various GIS aspects such as Geospatial data Extraction/Digitization, Data Conversion, QC/QA, Data Management, Data Integration, Analysis, Modelling, and Scenario Development.
- ⇒ Have around 11 years of experience in GIS Analysis, modelling applications.
- ⇒ Have excellent knowledge in Automated Mapping and Facility Management (AM/FM) Applications.

#### Spatial Data Science (SDS) & Analytics & GeoAI & ML for Geo-Intelligence and Visualization:

- ⇒ Very strong in conceptualising and implementing SDS & data analytics applications for diversified sectors.
- ⇒ Have expertise in 'Exploratory & Predictive Analytics', 'Pattern Detection and Clustering', 'Correlation and Regression Modeling', 'Hotspot Analysis & Mapping', 'Image Analysis', 'Data Visualization', 'Spatial Reasoning', 'Place Intelligence', 'Spatial Morphological Interpolation', 'Spatial Simulation', etc.
- ⇒ Expert in big data applications. Exceptionally good in data modelling, analysis, visualisation and reporting.
- ⇒ Taken strategic initiatives to create analytical roadmap for process automation for various projects.
- ⇒ Good in designing professional reporting and dashboard applications.

#### Remote Sensing:

- ⇒ Have sound knowledge in dealing with various remote sensing techniques such as satellite data processing, interpretation and extraction.

- ⇒ Expert in using various information retrieval algorithms for Optical, Infrared and Thermal remote sensing data acquired by different sensors such as DIGITAL GLOBE, LISS-II, LISS-III, LISS-IV, PAN, NOAA, OCM, LANDSAT, SPOT, IKONOS, SAR, RADARSAT, MODIS and Aerial photographs data etc.
- ⇒ Certified Reseller of Digital Globe's High Resolution Image (HRI) products.

#### **Application Architecture & Design:**

- ⇒ Have expertise in WebGIS application architecture, design and specification requirement documentation.
- ⇒ Designed and developed various enterprise GIS solutions and products related to geodatabase development and management, distribution.
- ⇒ Conceptualized and developed various WebGIS information products for Real estate, Financial Market Potential Index and e-governance applications.
- ⇒ Excellent in GIS application development and customization methodologies.
- ⇒ Have sound knowledge in enterprise GIS application development.
- ⇒ Good in conceptualizing, designing, architecting and implementing innovative ideas.
- ⇒ Have application knowledge in UML and Software development methodologies.

#### **Spatial Database Management:**

- ⇒ Have excellent understanding of designing spatial data models according to application requirements.
- ⇒ Have hands on experience on working with open source database management software, such as, Postgre/PostGIS.
- ⇒ Experienced in handling ESRI geodatabases via ArcSDE.
- ⇒ Have application knowledge in GIS Data Modeling using E-R diagrams.

#### **Digital Image Processing:**

- ⇒ Expert in various Image processing techniques such as georeferencing, mosaicking, masking, classification (supervised, unsupervised), change detection, DEM/DTM generation, noise removal, atmospheric correction, deriving Sea Surface Temperature, PCA, resolution merge, Layer Stalking etc.
- ⇒ Experienced in image processing techniques for the suspended sediment concentration (SSC), Chlorophyll concentration using IRS P4 Ocean Color Monitor (OCM) data. Also good in retrieval of Sea Surface Temperatures (SST) from the NOAA AVHRR data for the PFZ identification.

#### **Photogrammetry:**

- ⇒ Have 5 years of core experience in Digital Photogrammetry.
- ⇒ Handled all stages of Photogrammetry projects, which includes Aerial Triangulation, Soft copy stereo data compilation, QC, QA, integrating the 3D data in GIS environment, Map finishing OrthoPhoto generation and Technical report generation.

#### **Aerial Survey for Aerial Photography:**

- ⇒ Have complete operational experience on aerial survey operations, including documentation, procedure to obtain for flying permissions and leveraging with the concerned officials (as specified in NLRMP project).
- ⇒ Have sound knowledge about international vendors and clients with different 'aircraft' and 'camera' alternatives for different purposes of aerial survey.
- ⇒ Thorough with the GCP collection and DGPS / GPS survey procedures, also good in geodesy.

#### **LiDAR:**

- ⇒ Have sound knowledge in LiDAR technology and applications.
- ⇒ Proficient with LiDAR applications especially, LiDAR classification, DSM generation, Power line Corridor mapping, Terrestrial LiDAR mapping, 3D CityModel generation etc.
- ⇒ Have thorough knowledge about LiDAR data acquisition instruments/sensors and mechanisms, such as, MMS, terrestrial LiDAR, industrial LiDAR, Altimetric LiDAR etc.

#### **CityGML:**

- ⇒ Proficient in creating 3D City Models using CityGML specifications.
- ⇒ Successfully designed, developed and delivered the 3D City Models of L-I and L-II generated using CityGML specification.

#### **Cartography & Mapping:**

- ⇒ Well versed with various cartographic techniques involved in various thematic mapping projects.
- ⇒ Experienced in both manual and digital map-making techniques.

#### **Data Quality Management:**

- ⇒ Have thorough knowledge in methods and tools for data quality management.
- ⇒ Good in defining and integrating methods for applications developed.  
Have knowledge in automated testing using Win Runner, Test Director and Load Runner.

#### **PreSales Expertise:**

- ⇒ Expert in analysing business requirements and preparation of Request for Proposals (RFPs) (Ex. for ICZM, NLRMP etc.) and thorough with project bidding processes.
- ⇒ Has expertise in solution architecture.
- ⇒ Extensively worked delivered various Proof of Concept (PoC) documents.
- ⇒ Very good in preparing and communicating marketing materials.
- ⇒ Has expertise in conceptualizing project life cycles and methodologies.

#### **Business Development:**

- ⇒ Has a great faculty in understanding and mapping client requirements.
- ⇒ Very good in liaisoning with Govt. and Ministerial officials at all levels for getting the necessary permissions. (DGCA, Ministry of Civil Aviation, Defence Ministry, Home Ministry etc.)
- ⇒ Enthusiast in building and maintaining business relationships with colleagues and clients.
- ⇒ Proactive in dealing with client for clarifying issues related to technology processes, products and services.
- ⇒ Has the ability to deal with strategic and sensitive issues
- ⇒ Brings clarity in objectives and reach agreement maintaining the interests of all parties.
- ⇒ Good in managing the proposal development process and maintain the time-lines for the proposal teams.

## **APPLICATION EXPERTISE**

### ***Urban / City / Municipal Applications:***

- Extensively worked on applications involving urban quality mapping, risk and growth potential evaluation.
- Have expertise in developing decision support models for generating liveability indices for urban areas.
- Experienced in developing spatial databases for urban management scenarios, maintenance and management.
- Successfully lead and delivered various urban utility mapping projects.
- Expert in urban sprawl mapping, site suitability, planning and sustainable development applications.
- Have hands-on-experience in developing municipal management systems and applications.

### ***Disaster Management & Natural Hazard / Cat Modelling:***

- Strong in creating CAT (catastrophe risk) models for insurance domain.
- Expertise in developing impact assessment models and natural hazard models for flood, cyclone, infectious disease and pollution risk assessment.
- Good in modeling of urban growth-risk aspects with respect to industrial and demographic scenarios.

### ***Natural Resource Management:***

- **Water Resource Management** - Experienced in identification and mapping of groundwater potential zones, drainage morphometry, micro-watershed modeling & management, erosion and Sediment Yield Index (SYI) mapping, irrigation planning, network mapping and management.
- Have expertise in interpretation, classification and mapping of Land Use /Land Cover at all 4 levels.
- Expert in evaluating and using the LU/LC data for planning and policy decisions.
- **Geomorphology and Bio geomorphology** - Have experience in interpreting, delineating, categorizing and mapping the geomorphology and bio geomorphology zones by analysing the remote sensing data.
- **Wetland & River & Coastal Zone Monitoring Studies** - Expert in remote sensing & GIS applications to Coastal Zone Management, Marine Remote Sensing and Environmental Management and Impact Analysis, Cause & Effect evaluation studies. Also expert in the aspects of coastal & delta landform evolution, coastal wetland degradation and microclimate changes, sedimentation analysis, near shore environ study (Turbidity and wave patterns).
- Fully abreast with Wetland Degradation Analysis, Mapping and Environmental Impact Analysis.
- Good in river erosion-accretion zone and hotspot identification and mapping.
- Developed semi-automated techniques for delineating land/water boundary in coastal and wetland zones. Expert in erosion/accretion modeling and using Digital Bathymetry Models for mapping the ocean/river/lake bathymetry.
- Have exposure to Potential Fishing Zone (PFZ) identification and mapping for forecasting.

### ***Micro-Climate Change and Environmental analysis and categorization:***

- Worked on the aspects of micro-climate change.
- Good at analysing climatic parameters using different techniques like, water balancing, drought categorization, climatic shifts and estimation of moisture, aridity and humidity indices etc.

### ***3D CityModel Development***

- Have expertise in generating 3D City models using CityGML specifications for urban planning, infrastructure mapping, virtual modelling etc.

### ***Automated Mapping / Facility management (AM/FM):***

- Have sound knowledge of AM/FM projects and technology implications on e-governance.

### ***Retail Site Selection:***

- Developed models for mapping retail market potentiality, marketing and distribution and competitor analysis.
- Developed site suitability analysis and growth-risk model for locating retail outlets.
- Well versed with consumer preferences and segmentation mapping.
- Good in customer networking and geo-intelligence analysis.
- Have knowledge in spatially enabling all retail stores for developing Supply Chain Operations Applications.
- Instrumental in developing Indoor Routing and navigation application for Xinte Technologies.
- Good in market/retail potentiality, demand analysis, trend evaluation etc.

### ***Real Estate:***

- Chief architect of the RE portal named *PropertyDreamz.com*, first of its kind in the world.
- Created various Growth-Risk potential models for the Real-Estate sector.
- Designed various real-estate site selection and suitability applications.
- Expert in real-estate market potential analysis.
- Trade area analysis, Gravity and Spatial Interaction Model Development.
- Experienced in Real estate land use / utility mapping and asset management.

#### ***Navigation / Transportation & Surveillance:***

- Have expertise in developing mapping applications for both ‘land’ as well as ‘marine’ systems.
- Architect of **navigation interface** (similar to Google Maps) using **Open Source** for PropertyDreamz.com.
- Expert in design, architecture and development of ‘**Indoor Navigation**’ applications for Retail / Hospitality / Healthcare and many other domains.
- Have experience in developing data models and mapping data for navigation and surveillance applications.
- Developed various models for mapping ‘**urban transportation efficiency**’ by analysing, monitoring and measuring parameters like road & traffic conditions, crowd, walkability, navigability etc.

#### ***Agro-Business GIS Information Applications:***

- Worked on mapping projects involving agriculture productivity, pricing of agro-commodity and business volume.
- Delivered crop acreage and yield potential thematic maps based on the classification of various optical remote sensing image data products captured by sensors like IRS LISS-IV, III and WiFS.
- Conceptualised, designed and delivered various agro-business GIS information products for reputed clients across the globe.
- Authored monthly newsletters for businesses related to agricultural productivity, commodity and pricing.
- Experienced in land capability assessment, crop suitability modeling and agro-climatic categorization.
- Have command over mapping of crop phenology and pest infection studies.

#### ***GIS Modeling for Financial & Economic and Investment Analysis:***

- Well versed with Socio-Economic and financial data modeling using GIS technology.
- Experienced in GIS for various urban growth / risk assessment and management models.
- Have expertise in identifying place competitiveness with respect to various index parameters.
- Sound knowledge of Market Area Analysis, Business site suitability, Market Potentiality estimation etc.
- Conceptualised the market potential, growth / risk index models based on investment analysis.

#### ***GIS Economic Modeling for Place Performance and Investment Analysis***

- Have special expertise in place strategy and place performance evaluation.
- Good in growth-risk modeling of places.
- Have expertise in Spatial-Temporal Analysis of Economic Data Place Performance and Investment Analysis.

#### ***Environmental Impact Analysis (EIA):***

- Have experience in analysing weather extremes and its impact on sea level rise and coastal erosion.
- Extensively studied the coastal mangrove environments their degradation and cause and effective relations.
- Experienced in pollution impact analysis (air, water, noise & soil), hotspot identification and mapping.
- Expert in urban and land-water resource sustainability assessment and management.
- Extensively worked on the Environmental Impact Assessment (EIA) projects.

#### ***Geological Mapping and Mineral Resource Targeting:***

- Have hands on experience in targetting iron ore resource using ASTER data.
- Experienced in the identification and mapping hydrocarbon potential zones in river delta zones.
- Good in mapping geological formations.

#### ***Infectious Disease Modeling and Public Health Surveillance Applications:***

- Extensively worked on infectious disease modeling, mapping applications.
- Led a study on the incidence of Dengue, Leptospirosis and Malaria incidents in Singapore by evaluating their cause and effect relation with various environmental and climate variables including floods, rainfall, temperature, humidity, demography, Vegetation, land use/land cover etc.
- Delivered projects on infectious disease and public health information surveillance applications.
- Developed exploratory, spatio-temporal analysis methods to evaluate the disease spread and impact using hotspot, cluster, correlation, regression models.

#### ***360° Panoramic Views***

- Have expertise in generating 360° panoramic views taken from different type of cameras.

#### ***Use of GPS, Surveying and Geochemical Analysis:***

- Well versed with field techniques. Implemented GPS organisation methods for conducting survey for various features to obtain sub meter accuracy.
- Have expertise in survey, data collection (primary and Secondary), subsurface sample exploration, analysis etc.

### **SOFTWARE PROFICIENCY**

<b>Software Category</b>	<b>Product of</b>	<b>Product Name</b>	<b>Purpose of use</b>	<b>Proficiency</b>
GIS	ESRI	ArcGIS / ArcGIS Pro	GIS Applications /Analysis	Expert
		ArcGIS Server	Enterprise / Web GIS Applications	Average
		ArcSDE	Geospatial Data Management	Good
	Open Source (OGC)	GeoServer/ Leaflet/ Open Layers/MapServer	Enterprise / Web GIS Application development	Very Good
	MapInfo	MapInfo 5.0	GIS Applications /Analysis	Very Good

	Intergraph	Geomeia		Very Good
	Open Source (OGC)	Quantum GIS, MapWindowGIS, GRASS, Diva GIS, fGIS, ZigGIS,		Expert
Data Science & Analytics & Visualization	Python & R	Python & R, Pandas, Geopandas, Numpy, Matplotlib, PySpark, RSGISLib, GDAL/OGR, IpyLeafLet,	Data Analytics & Visualization	Very Good
	Tableau, Power BI	Tableau, Power BI		Very Good
	Dash	Plotly		Good
CAD & GIS	Intergraph	Microstation 8.0	Data Extraction/Digitization	Expert
	Autodesk	AutoCAD		Good
	Microsoft	IntelliCAD		Good
Digital Image Processing & GIS	ERDAS	Erdas Imagine 8.x	Satellite image data processing, georeferencing, classification, DEM/DTM, Mosaicking, Raster analysis, Image Enhancements, Resolution merge etc.	Expert
	PCI	Easi/Pace 7.0.2		Very Good
	ITC	ILWIS 5.0		Very Good
	PCI	Geomatica 7.0	Marine navigation & mapping	Very Good
	SevenCS	ENC Designer		Very Good
	Bentley	IRAS-B		Very Good
	Adobe	Adobe Photoshop		Very Good
Photogrammetry	Bentley Intergraph, Z/I	SocetSet, INPHO, Image Station SSK (ISFC, ISSD, ISDC, ISAE, ISAT, ISPM),	Aerial Triangulation, 3D feature capture, DEM / DTM etc	Expert
		Terrashare	Raster Image data Management	Very Good
OrthoPhotos	Bentley, Intergraph, Z/I	Orthopro, Orthovista	OrthoPhoto generation	Very Good
GPS	Garmin, Trimble	DGPS	Surveying, On field data capturing	Very Good
RDBMS	Microsoft	SQL Server 2017	Database Management, Analysis	Good
	Microsoft	Ms Access		Good
	Open Source (OGC)	PostgreSQL / Post GIS, MySQL	Geospatial Data Management	Very Good
Application / GUI Development	Microsoft / Google	C# .Net, Asp.Net	Applications / GUI development / Customization	Good
		Javascript		Good
		HTML, CSS	Web Development	Very Good
Markup Languages	W3C	XML, GML	Web development, data sharing	Good
3D City Modeling	Autodesk	CityGML	LandExplorer , 3DS Max	Very Good
Office Management	Microsoft	MS Word, MS Excel, MS PowerPoint, Visio		Expert

### TRAININGS UNDERGONE/IMPARTED

Trainings Undergone	Trainings Imparted
<i>Centre for Space Science and Technology Education in Asia &amp; Pacific, Affiliated to United Nations</i>	Expert Lectures – Winter School PDP on Geospatial Technologies – Application to Science and Engineering Research (Geostap-2015), 19th December, 2015 to 08th January, 2016, GITAM University, Visakhapatnam
<i>Regional Remote Sensing Service Centre, (N), National Remote Sensing Agency, ISRO, Govt. of India.</i>	Course Coordinator, Geoinformatics Certification Course for the Engineers of Dept. of Irrigation, Govt. of Andhra Pradesh. (1 <sup>st</sup> Mar., to 15, Apr. 2003)
	Supervised students for B.Tech. / M.Tech. / Ph.D. on Remote sensing & GIS Technology and environmental applications for their academic projects.
	Delivered lectures on Geospatial Information technology and Environmental Applications in various reputed forums, universities and institutes.

### RESEARCH PUBLICATIONS

#### Book Chapters:

1. Murali Krishna G. and Pang, V.J. (2020): Geospatial Technology and Tools for Infectious Disease Surveillance, Infectious Disease Outbreaks in ASEAN in the 21st century, IECID, Singapore.
2. Murali Krishna G. and Nooka Ratnam K., (2019): Evaluation of Risk Potential of Industries and Natural Hazards in the Wards of Hyderabad, India - AHP Multi-criteria Modeling Perspective Using Remote Sensing and GIS; Proceedings of International Conference on Remote Sensing for Disaster Management; Springer

**Papers in International Journals:**

1. Murali Krishna Gurram (06-2022): Dynamics of Urban Growth vis a vis Microclimate- Remote Sensing & GIS and Water Balancing Perspective, *The Environment Management*, Vol. VIII(2), pp. 16-30,
2. Murali Krishna Gurram, Min Xian, Yi-Chen and Vincent Pang (2022): Impact of urbanisation and environmental factors on spatial distribution of COVID-19 cases during the early phase of epidemic in Singapore, *Scientific Reports, Nature*. 2022 Jun 13;12(1):9758. doi: 10.1038/s41598-022-12941-8. PMID: 35697756. IF 5.516. ISSN 2045-2322
3. Murali Krishna Gurram, Rajesh Kumar, S., Bigneshwar Panda, Harini nayana, J. (2020). A novel compression approach for dual quality 32 bit dadda multiplier. *Science, Technology and Development*. Vol. ix(viii), ISSN : 0950-0707. Pp. 65-77. Aug., 2020.
4. Murali Krishna, G. and Nooka Ratnam, K. (2020): "Remote Sensing and GIS for Integrated Modeling and Analysis for Mapping of Groundwater Potential Zones in Sarada River Basin, Visakhapatnam, India", *International Letters of Natural Sciences*, SciPress, ISSN: 2300-9675, Vol. 78, pp 1-13
5. Murali Krishna Gurram and Nooka Ratnam Kinthada (2018): Remote Sensing and GIS based Study on Land Capability Assessment for Sustainable Crop Development in Sarada Basin, Visakhapatnam District, Andhra Pradesh, *The Indian Geographical Journal*, Vol. 93, No. 1 & 2, ISSN 0019-4824. Pp. 10-20.
6. Sairam Korada and Murali Krishna Gurram (2018): A Geospatial Intelligence System for Digital Allocation of Feed and Waste Zones in Iron Ore Mining, *Journal of Earth Sciences and Geotechnical Engg.*, Vol. 8, No.4, pp. 35-44, IF 1.84, ISSN 1792-9040 (print ver.), 1792-9660 (online ver.). IF 1.84, Georef, GoogleScholar.
7. Murali Krishna Gurram and Nooka Ratnam Kinthada (2018): Influence of Demographic and Socio-Economic Variations in Shaping Urban Structure - A Ward Level Study on Hyderabad, Telangana using Remote Sensing and GIS Techniques. *International Journal of Engineering, Science and Mathematics*, Vol. 7, Issue 3, March 2018 (Special Issue), pp. 55-63, ISSN 2320-0294, IF 6.765, UGC, Scopus (ID: 3D9ED96C3EFA9FBD)
8. Naga Sai Sindhuja, V., Victor Babu, N., Ramesh Naidu, CH., and Murali Krishna Gurram (2017): Watershed Preservation and Control Using GIS; *International Journal of Engineering, Science and Mathematics*; Vol. 6, Issue 8, No.1, pp. 266-268; ISSN: 2320-0294. IJMRA Publications
9. Murali Krishna G. and Nooka Ratnam K. (2016): Utility of Large Scale Photogrammetric Techniques for 3-D Mapping and Precision Iron Ore Mining in Open Pit Areas, *Journal Geology & Geophysics*, Vol. 6, No.1, pp. 270-274, IF 1.24, ISSN: 2381-8719, doi: 10.4172/2381-8719.1000270. Scopus, Google Scholar etc.
10. Yenamala Sreedhar, Arveti Nagaraju and Gurram Murali Krishna (2016): An Appraisal of Land Use/Land Cover Change Scenario of Tummalapalle, Cuddapah Region, India - A Remote Sensing and GIS Perspective, *Advances in Remote Sensing*, Vol. 5, No. 4, pp. 232-245, IF 1.51, ISSN Print: 2169-267X, ISSN Online: 2169-2688. DOI: 10.4236/ars.2016.54019. Scopus, Google Scholar, I-Scholar, CrossRef, etc.
11. Murali Krishna Gurram (2016): The Emergence of GIS – ‘Techno’spective Insights, *Consultants Review Magazine*, Vol. 2, Issue 8-4, pp. 34-35. Scopus, Google Scholar etc.
12. Murali Krishna G., Deekshatulu B. L. and Nooka Ratnam K. (2015): Urban Environmental Quality Assessment at Ward Level using AHP based GIS Multi-Criteria Modeling – A Study on Hyderabad City, India, *Asian Journal of Geoinformatics*, Vol. 15, Issue 3, pp. 16-29. IF 1.05, ISSN No. 1513-6728. SCI, Scopus, GoogleScholar etc.
13. Murali Krishna G., Nooka Ratnam K., Ravi, P. and Sridhar, P. (2015): A Holistic Approach for the Development and Implementation of Robust and Cost-Effective Enterprise WebGIS Business Solutions, *Journal of Geographic Information System (JGIS)*, Vol. 7, pp. 478-485. IF 1.05, ISSN Print: 2151-1950, ISSN online: 2151-1969. SCI, Scopus, Google Scholar, I-Scholar, CrossRef, etc.
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5. Nageswara Rao, K., Murali Krishna, G., Ram Prasad Naik, D., Hema Malini, B., (2003): Remote Sensing And GIS Applications In The Identification of Aquaculture Hotspots At Village Level – A Case Study Of Godavari Delta Coastal Belt, *Photonirvachak, Journal of Indian Society of Remote Sensing*. Vol. 31, No.2, pp. 71-80, IF 0.62, ISSN Print: 0255-660X, ISSN Online: 0974-3006.
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### **Papers in Conferences**

- Murali Krishna G. and Nooka Ratnam K. (2018): " Influence of Demographic and Socio-Economic Variations in Shaping Urban Structure - A Ward Level Study on Hyderabad, Telangana using Remote Sensing and GIS Techniques "; National Conference on Geospatial Technologies for Sustainable Forests and Water Resources (GTSFW-2018), 21-22, Mar., 2018, organized by Dept. of Geo-Engineering and Centre for Remote Sensing, Indian Society of Remote Sensing (ISRS) and Indian Society of Geomatics (ISG) at College of Engineering (A), Andhra University, Visakhapatnam.
- Murali Krishna G. and Nooka Ratnam K. (2017): "Evaluation of Risk Potential of Industries and Natural Hazards in the Wards of Hyderabad, India – AHP Multi-Criteria Modeling Perspective using Remote Sensing and GIS"; International Conference on Remote Sensing for Disaster Management 2017 (ICRSDM-2017), 11-13, Oct., 2017, organized by Dept. of Geo-Engineering and Centre for Remote Sensing and Indian Society of Geomatics (ISG) at College of Engineering (A), Andhra University, Visakhapatnam.
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- Nooka Ratnam K., Murali Krishna G., Amminedu E. and Venkateswara Rao V., (2012): Remote Sensing And GIS in the Geomorphometric Analysis of Micro-Watersheds for Hydrological Scenario Assessment And Characterisation – A Study On Sarada River Basin, Visakhapatnam District, India, 5<sup>th</sup> A.P. Science Congress 2012, 14<sup>th</sup> to 16<sup>th</sup> November, 2012, Nagarjuna University, Guntur.
- Murali Krishna G., Krishna Kumar Naithani, Christian Ihlenfeldt and Simon Musäus, (2012): Utility of Large Scale Photogrammetric Techniques for 3-D Mapping and Precision Iron Ore Mining in Open Pit Areas, Indian Conference on Mine Surveying - 2012, 29<sup>th</sup> to 30<sup>th</sup>, October, 2012, Indian School of Mines, Dhanbad, India.
- Murali Krishna G., Simon M., Krishna Kumar N. and Nooka Ratnam K., (2012): A Holistic Approach for the Development and Implementation of Robust and Cost-Effective Distributed WebGIS Business Solutions, India Geospatial Forum, 7<sup>th</sup> to 9<sup>th</sup> Feb., 2012, Gurgaon, India.
- Murali Krishna, G., Usha Ch. and Nooka Ratnam K. (2011): Morphometric Analysis of Mehadrigedda Watershed – A GIS Approach, National Conference on "Development and Sustainability of Earth Resources and Environment (DSERE)" 12<sup>th</sup> to 13<sup>th</sup> March, 2011, AdiKavi Nannaya University, Rajahmundry, India.
- Hari Babu, P., Murali Krishna, G., Nooka Ratnam, K., (2011): Digital Mapping And Property Management Of Temples Using Remote Sensing And Geographical Information Systems - A Case Study, National Conference on "Development and Sustainability of Earth Resources and Environment (DSERE)" 12<sup>th</sup> to 13<sup>th</sup> March, 2011, AdiKavi Nannaya University, Rajahmundry, India.
- Hema Malini, B., Murali Krishna, G., Anuja Tigga, Surya Kumari and Nageswara Rao, K., Problems and Prospects of natural resource development of Yarada an isolated village adjacent to Visakhapatnam city, National Conference on Sustainable Resource Management (1999), Journal of Applied Hydrology.

### **Research Studies**

- Remote Sensing and GIS Applications in the Identification Aquaculture Hotspots at Village Level – A Case Study of Godavari Delta Coastal Belt.
- Linear Shoreline Change Detection using Remote Sensing and GIS based Grid & Graph Analysis method – A study on Sagar Island, East Coast of India.
- Digital Mapping and Property Management of Temples using Remote Sensing and Geographical Information Systems - A Case Study.
- Remote sensing and GIS approach in the Identification of Optimal locations for the Establishment of Agricultural Marketing Yards – A case study in Guntur District of Andhra Pradesh".
- 

### **MEMBERSHIPS IN PROFESSIONAL BODIES**

- Life Member of Indian Society of Geomatics (ISG). Membership No. L-1360
- Life Member of Indian Society of Remote Sensing (ISRS). Membership No. L-3866
- Life Member of Association of Hydrologists of India (AHI). Membership No. AHI-LM-498-797
- Editorial Board Member, International Journal of Geoinformatics, Bangkok
- Editorial Board Member, International Journal of Advanced Multidisciplinary Scientific Research (IJAMSR)
- IEEE and Geographic Activities, Member

### **AS SPEAKER IN THE CONFERENCE**

- International Webinar on “Only One Earth : Sustainable Actions for Environment”, organised by SIES Indian Institute of Environment Management, Nerul, Navi Mumbai, India on 07th June, 2022. “Dynamics of Urban growth vis-à-vis Micro-climate - Remote Sensing, GIS and Water-balancing Perspective : A Study on Hyderabad, India”
- International Conference on Ecology and Technology Development, jointly organised by the Mongolian University of Life Sciences (MULS), Mongolia, St. Petersburg University and University of Natural

Resources and Life Sciences, Vienna, Austria on 29<sup>th</sup> October, 2021. “Varying micro-climatic conditions vis-à-vis Urbanization – A Study of Hyderabad, India using Water-balancing, Remote Sensing & GIS Techniques”.

- DBS Talks “Location Intelligence and GIS Development – Principles and Applications” organised by Damisetty Bala Suresh Institute of Technology (DBS), Nellore, on 21<sup>st</sup> June, 2020
- Delivered lecture titled “Remote Sensing and Spatial Modelling Applications for Air Quality Monitoring” in the International webinar organised by Environmental Tech. Division, School of Industrial technology, University Sains Malaysia on 5<sup>th</sup> Dec., 2021.

#### **SEMINAR / SYMPOSIA PARTICIPATED**

- Participated in 2nd United Nations Committee of Expert on Global Geospatial Information Management (UN-CGIM) & UNWGIC Pre-Event 2022 online conference on “Geo-Enabling the Global Village” dated 20-21 July, 2022 organized by Survey of India (SoI).
- National Workshop on “Exploring the World through GIS” conducted by Dept. of Geo-Engineering, Andhra University College of Engineering (A), Visakhapatnam and Indian Society of Geomatics – Visakhapatnam Chapter, 14-15<sup>th</sup> November, 2018.
- National Conference on Geospatial Technologies for Sustainable Forests and Water Resources (GTSFW-2018), 21-22, Mar., 2018, organized by Dept. of Geo-Engineering and Centre for Remote Sensing, Indian Society of Remote Sensing (ISRS) and Indian Society of Geomatics (ISG) at College of Engineering (A), Andhra University, Visakhapatnam.
- International Conference on Remote Sensing for Disaster Management 2017 (ICRSDM-2017), 11-13, Oct., 2017, organized by Dept. of Geo-Engineering and Centre for Remote Sensing and Indian Society of Geomatics (ISG) at College of Engineering (A), Andhra University, Visakhapatnam.
- Geospatial India Forum, 10-12 Feb., 2015, Hyderabad.
- One Day Workshop on “Geospatial Technologies for Resources Evaluation and Disaster Management (GTREDM)” conducted by Dept. of Geo-Engg., College of Engg.(A), Andhra University, Visakhapatnam supported by Technical Education Quality Improvement Programme (TEQUIP), Phase-II on 22<sup>nd</sup> April, 2015.
- Geospatial India Forum, 22-24 Jan., 2013, Hyderabad.
- 13<sup>th</sup> ESRI User Conference 2012, 5<sup>th</sup> to 6<sup>th</sup> December, 2012, Radisson Blu MBD Hotel, Noida, Delhi NCR.
- 5<sup>th</sup> A.P. Science Congress 2012, 14<sup>th</sup> to 16<sup>th</sup> November, 2012, Nagarjuna University, Guntur.
- INPHO & e-Cognition Workshop 2012, jointly organized by Trimble Geospatial and Amigo Optima Solution Pvt. Ltd., 13<sup>th</sup> July 2012, New Delhi, India.
- India Geospatial Forum 17-19 Feb., 2012, Gurgaon, India.
- Emerging Technologies in Surveying, organised by TopCon Sokkia India Pvt. Ltd., Gurgaon, NCR Delhi, 09<sup>th</sup> December 2011.
- National seminar on “Development and Sustainability of Earth Resources and Environment (DSERE 2011), 12<sup>th</sup> to 13<sup>th</sup> March 2011, organised by School of Earth and Atmospheric Sciences, Adikavi Nannaya University, Rajahmundry, A.P., India.
- Canadian Geospatial Technology Partnership International Seminar, 18<sup>th</sup>, Jan, 2011, Hyderabad
- Geospatial World Forum 17-21 Jan., 2011, Hyderabad.
- MapWorld Forum 10-13 Feb., 2009, Hyderabad.
- International Seminar on Earth Observation Systems for Disaster Management – Capacity Building, Methods, and Challenges, IIRS Dehra Dun, 29-30<sup>th</sup> June, 2004.

#### **PERSONAL PARTICULARS**

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*Excellent References shall be provided on request*