

SEPTEMBER 26, 2024



NATURE OF WORK DOCUMENT

Business Name: **Mapstrix Solutions LLP**

LLP Identification Number: **ACJ-5194**

Nature of work: **Web Application development, Software development, Data Analytics, Spatial Data Analysis, and Statistical Consultancy**

1. Preface

Mapstrix Solutions LLP is a limited liability partnership firm incorporated as a professional service provider that specializes in development of software, applications, web-based applications, data analytics and consultancy services focused in spatial data analysis and statistical services. The prime objective of Mapstrix Solutions LLP is to deliver comprehensive, cutting-edge solutions for business, institutions, researchers, government and non-government agencies, to support and improve the efficiency and decision-making capabilities of the clients through data driven insights.

2. Detailed Work Portfolio

Mapstrix Solutions LLP supports clients with a wide range of services specifically focusing on the following core expertise areas:

A. Application development services

We develop and design custom applications compatible for web, desktop and mobile platforms based on custom software solutions tailored to client needs. This includes:

- Full-stack web application development
- WEB maps and Web-GIS application development
- Tools tailored for data analytics, Geographic Information Systems (GIS), and automation.
- Mobile application development for Android and iOS platforms.
- Development and integration of API services for seamless functionality across different platforms.
- Docker generation and support for the client.
- Maintenance and support for all software works delivered.

Through these application services, we intend to serve following key areas:

- Environmental management and sustainable development
- Urban planning and digitization of earth and man-made features.
- Health care analytics
- Academics, research organizations, education and training

B. Spatial data analysis services

With our expertise in Geographic Information Systems (GIS), we provide cutting-edge services tailored to the client requirement. This includes:

- Spatial data acquisition, processing and management.
- Remote sensing data analysis including satellite imagery, drone imagery, optical data and LiDAR data, using conventional and machine learning classification and mapping methods.
- Development of efficient urban planning, sustainable development modules using geospatial modeling.
- Environmental monitoring, resource mapping, and natural resource management.
- Spatial data visualization through various visualization techniques and interactive web-based maps.

Our key spatial data services includes:

- Digitization and mapping of earth features.
- Location based risk assessment for market and business projects
- Site suitability analysis for aquaculture, farming activities, industrial installation and business works using geostatistical methods.
- Land use/Land cover change detection and environmental impact assessment.
- Capacity building and training for students, researchers and professionals on spatial data analysis.

C. Statistical data analytics services

Mapstrix Solutions LLP offers services towards management, analysis and vidualization of complex data for actionable insights. This includes:

- Data mining, cleaning and big data analysis
- Data modeling and predictive data analytics using machine learning and artificial intelligence algorithms.
- Application of Power BI and Tableau for improved business intelligence solutions.
- Development of dashboards and visualization tools for real-time data analysis and automation.

Major analytics features are:

- Statistical analysis focusing on descriptive methods.
- Inferential data analysis
- Multivariate statistical analysis and modeling
- Time series analysis and forecasting
- Machine learning based classification, regression and clustering

D. Website development services

[Mapstrix Solutions LLP](#) offers end-to-end website design and development services. This includes:

- Corporate websites, website for research works, and dynamic portal design.
- Ensure accessibility over multiple platforms.
- Database management and integration
- Hosting, domain registration and long-term maintenance as required by the clients.

Key capabilities includes:

- Custom web design.
- Scalable and secure architecture.
- Application of modern frameworks like React, Angular etc.

E. Consultancy services

Experts from Mapstrix Solutions LLP offers in-depth statistical and spatial analysis, training and consultancy services for various domains:

- Statistical modeling and hypothesis testing for research projects.

- Statistical analysis and report generation.
- Survey design and sampling methods
- Multivariate data analysis and advanced statistical techniques for complex datasets for various fields like life sciences, pharmacology, earth sciences etc.

Key service includes:

- Capacity building and training for students, researchers and professionals on statistical analysis
- Professional support at various stages of research works including sampling design, sampling activities, data cleaning, data analysis, scientific plotting, interpretation and reporting.

F. Blue Carbon Economy Development

Mapstrix Solutions LLP proposes to expand its portfolio into blue carbon research and planning services, focusing on:

- Mapping vulnerability, spatial extent, and feasibility of critical coastal habitats such as seagrass meadows, mangroves, and coral reefs.
- Spatial modeling and scenario analysis to enhance the proliferation and restoration of blue carbon ecosystems.
- Carbon stock assessment and valuation to quantify economic and climate mitigation benefits.
- Development of interactive dashboards and decision-support tools for policymakers, researchers, and conservation agencies.
- Capacity building workshops and training programs to raise awareness about the economic and ecological importance of blue carbon ecosystems.
- Supporting government and private stakeholders in integrating blue carbon strategies into climate action plans and sustainable coastal development.

Way forward: Blue Carbon and Carbon Credit Trading

The BEE Carbon Credit Trading Scheme (CCTS) in India is an emerging mechanism aimed at incentivizing and rewarding organizations that actively reduce greenhouse gas emissions.

Mapstrix Solutions LLP envisions that coastal blue carbon ecosystems — including seagrass meadows, mangroves, and coral reefs — can be scientifically mapped, monitored, and documented for their carbon sequestration potential. By advising and supporting government agencies to formally include these restored, protected, or extended blue carbon habitats into the national carbon credit framework, we aim to:

- Encourage private companies, especially those with higher emissions, to invest in conservation and restoration as "protectors."
- Enhance the economic value of natural ecosystems by linking them directly to climate targets.

- Create transparent, data-driven methodologies and tools to quantify, verify, and report blue carbon credits.

Through this approach, blue carbon ecosystems become not only critical for biodiversity and coastal resilience but also active instruments for climate mitigation and sustainable finance.

3. Expertise of **Mapstrix Solutions LLP**

- Programming languages like Python, R, JavaScript, SQL, HTML5, CSS3 etc..
- GIS tools like ArcGIS, QGIS, Erdas Imagine, Envi, SEADAS, SNAP, Google Earth Engine (GEE), etc.
- Data Visualization tools
- Database management systems using PostGIS/PostgreSQL, MySQL etc.
- Cloud platforms like AWS, google cloud platforms etc..
- Machine Learning libraries like Keras, PyTorch, TensorFlow, YOLOv5, Scikit-learn etc..
- Mobile development Frameworks like Android Studio, Flutter etc..

4. Mode of Operation

Mapstrix Solutions LLP is working with an aim to operate with a client-centric approach, assuring that the expertise within the firm will be well utilized and every solution is tailor-made to meet the specific requirements of the clients. We extend flawless collaboration with clients at different stages of the projects from conception to deployment, ensuring the client's active participation for their highest quality and satisfaction.

Contact Information

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