Specialization in

Advanced Urban Analytics

Dive into the Future of Data-Driven Geospatial Insights to Build Smarter, Sustainable Cities

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COURSE DESCRIPTION

WHAT IS ADVANCED URBAN ANALYTICS PROGRAM BY @L.A.B.S. ?

Unlock the Power of Geospatial Analytics

Explore advanced tools like GIS, satellite imagery, and spatial data to revolutionize urban planning and infrastructure development

Lead with Data-Driven Urban Strategies

This course empowers professionals to harness data-driven insights for sustainable, efficient, and forward-thinking city planning

Design Resilient, Future-Ready Cities

Optimize urban systems by integrating geospatial data into decision-making, improving resource management, and enhancing resilience to climate challenges

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FEATURES

DISCOVER

6+ SOFTWARES

15+ PLUGINS

3+ CODE PLATFORMS

3+ AI MODELS

DEVELOP

Seamless AI Workflow Integration

Dashboard Design And Development

Python For Advanced Analytics

Pitching Techniques Urban Proposals

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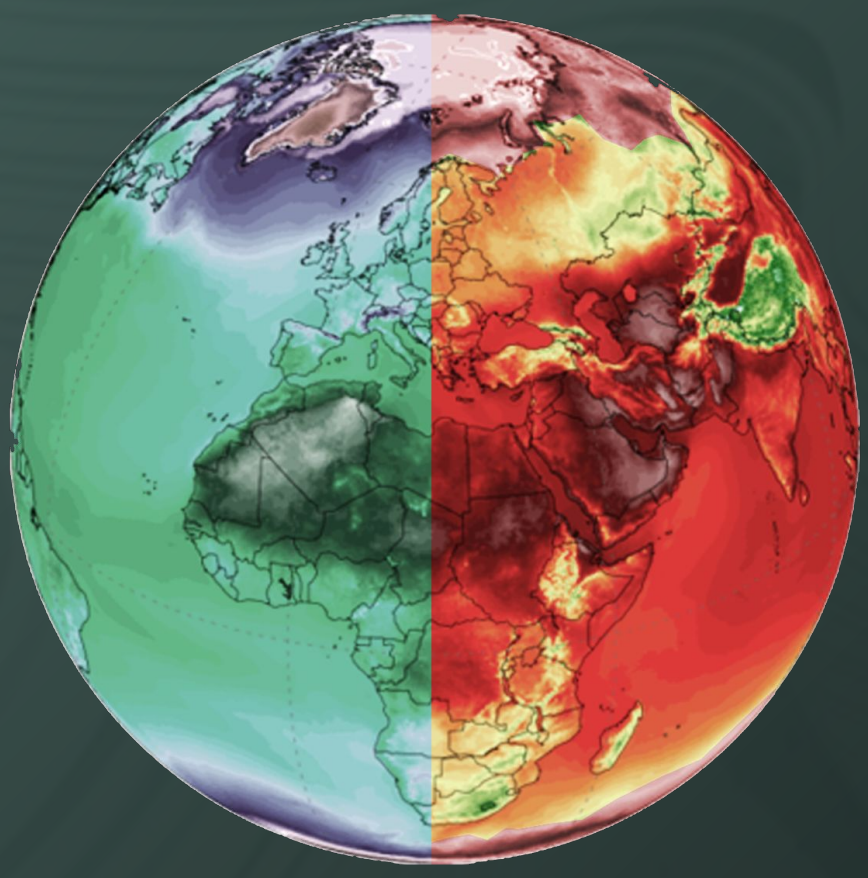
INDUSTRY

DATA
ANALYTICS
EXPERTISE

INTEGRATION
OF ADVANCED
AI TOOLS



RISING URBAN
COMPLEXITIES

REQUIRED
INFORMED
DECISION
MAKING

Fuel Your Career with In-Demand Skills in Geospatial and Data-Driven Urban Planning

GAIN COMPETITIVE ADVANTAGE

With

Data analytics & Artificial Intelligence

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CAREER

DRIVE IMPACT

CREATE

Data Driven Strategies

CURATE

Geospatial Insights for Smarter Decisions

CULTIVATE

Sustainable Urban Growth and Resilience

FIRMS

Systematica · ATKINS · IUA · giz · RMI · esri · THE WORLD BANK · MOTT MACDONALD

PROFESSIONAL ROLES

- Geospatial Data Scientist
- Urban Policy Analyst
- Urban Systems Modeler
- Urban Data Analyst
- Data Visualization Specialist
- AI Planning Consultant

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FRAMEWORK

Learn From the Global Experts
Experts from multidisciplinary fields

Practical Skills Development
Industry - Aligned Applications

Career Guidance
Customized Career Development Plans

PEDAGOGY

- **LIVE CLASSES :** All classes are conducted live
- **FREQUENCY :** 2 classes per week, Each class is 3 hrs
- **STRUCTURE :** Organized into 4 modules - Beginner to Advanced
- **SUPPORT :** Each module includes support and query sessions
- **TOTAL DURATION :** 50+ hrs over 10 Weeks

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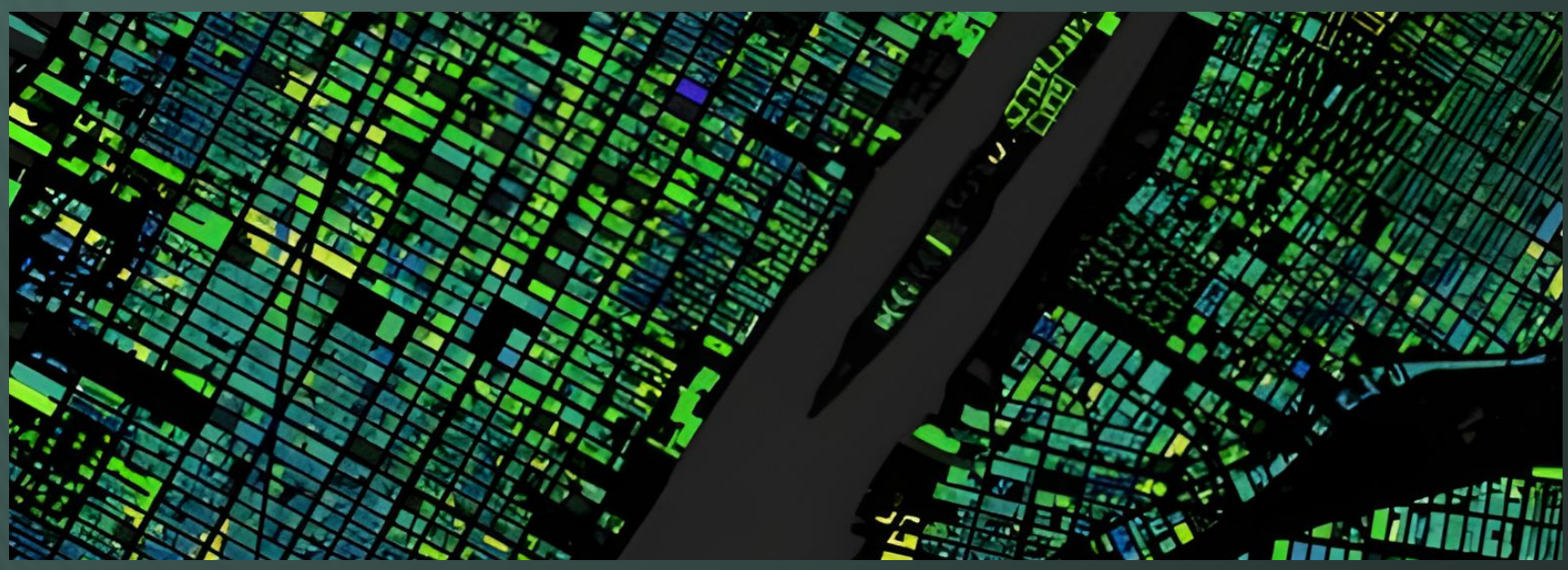
CURRICULUM

LEARN - Foundation



Introduction to Big Data

- ❏ Definition, Principles, and Evolution
- ❏ Applications across different industries

Big Data & Urbanism

- ❏ Big data applications in urbanism
- ❏ Timeline frol methods to mom historicadern geospatial techniques
- ❏ Big data utilization in the development of smart cities

Open Data Repositories & Frameworks

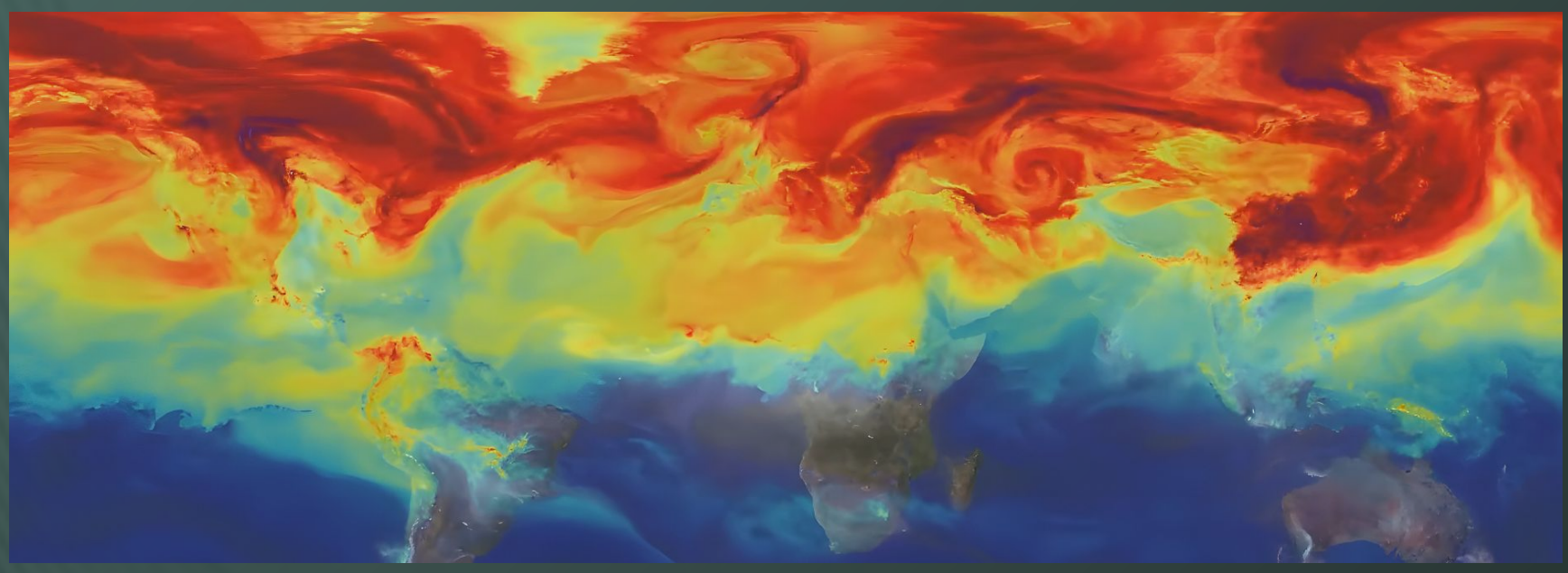
- ❏ Identifying sources for Open geospatial datasets
- ❏ Techniques for effective data collection from various platforms
- ❏ Understanding data formats and structures in geospatial data
- ❏ Building shapefiles from scratch and adding data manually

Mapping and Geospatial Data Representation

- ❏ Theory of mapping and its role in spatial analysis
- ❏ Exploring various forms of geospatial data for effective mapping
- ❏ Presentation and application of point, line, and polygon data
- ❏ Visualization Techniques for representing geospatial data through maps

CURRICULUM

APPLY - Intermediate



Geospatial Data Processing with GIS

- ❏ Importing various data types into QGIS (vector, raster, etc.)
- ❏ Reading and interpreting different types of geospatial data
- ❏ Understanding coordinate systems and projections in GIS
- ❏ Comparing and overlaying multiple geospatial datasets for analysis

Data Transformation & Conversion

- ❏ Understanding data value (qualitative, quantitative, continuous, discrete)
- ❏ Conversion methods for data types within QGIS
- ❏ Dealing with NULL or no data values in geospatial datasets
- ❏ SQL in QGIS (Data Manipulation,Querying, Filtering, streamlining)

Real World Project Setup

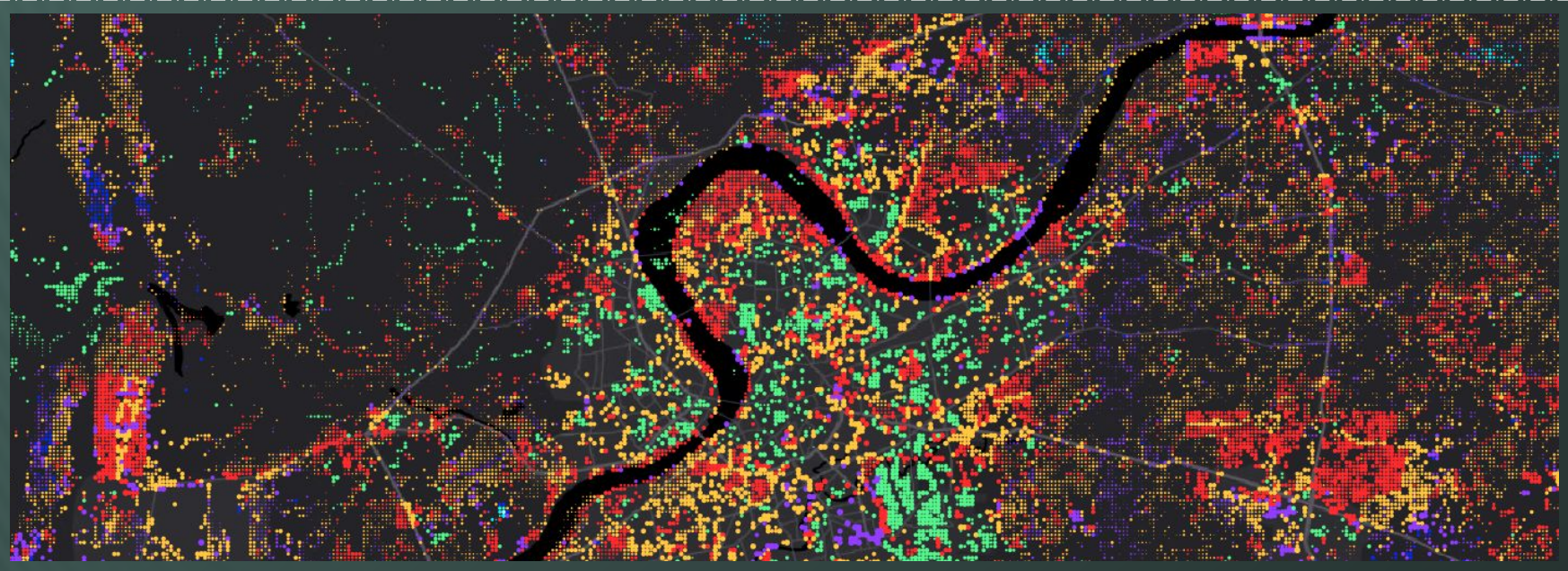
- ❏ Project theme emphasizing on SDG goals by the UN
- ❏ Plugins for data collection & processing (QuickOSM, Travel Time, QNET)
- ❏ Advanced analyses: Network Analysis, Spatial Interpolation, Hotspot Analysis, Accessibility Analysis, Hydrological Modeling

Solutions and Strategic Outcomes

- ❏ Streamline data-driven design by aligning with Government policies
- ❏ Develop the project strategy based on analyzed data & regulations
- ❏ Create non-spatial representations & Graphs results for feedback

CURRICULUM

BUILD - Advance



Introduction to Python

- ❏ Scripting to Collect data from open datasets, satellite imagery, and APIs
- ❏ Data Scraping with Python using Scrapy
- ❏ Google Earth Engine with JavaScript for large-scale geospatial analysis

Data Visualization with Python

- ❏ Clean datasets for analysis using pandas for data manipulation
- ❏ Employ geopandas and other libraries for transforming and handling
- ❏ Visualizations with matplotlib & seaborn to present data effectively

Spatial Analysis with Python

- ❏ Perform spatial joins and overlays using geopandas to combine datasets
- ❏ Conduct proximity and distance analysis with scipy.spatial
- ❏ Visualize trends with folium, matplotlib, & plotly for interactive maps

Advanced Applications and Case Studies

- ❏ Analyze urban growth and land-use changes with rasterio
- ❏ Explore case studies in logistics & planning for optimized routing
- ❏ Advanced techniques in Python for practical data-driven insights

CURRICULUM

SCALE - Expert

Exploring AI in Geospatial Analysis

- ❏ SAM (Segment Anything Model) for satellite & street-level imagery
- ❏ Leverage AI to segment spatial features of land uses
- ❏ AI-driven Strategies for a more comprehensive geospatial analysis

Leveraging AI to Identify Patterns and Behavior

- ❏ Utilize K-means & hierarchical clustering to identify patterns in datasets
- ❏ Test AI models, iterate, & interpret results to refine clustering approaches
- ❏ Leverage clustering results to inform decision-making in urban planning

App Development: Decision-Making & Participatory

- ❏ Introduction to dashboard development for project visualization
- ❏ Explore Tableau & Power BI as tools for publishing & sharing your project
- ❏ Learn best practices for designing interactive & informative dashboards

Pitching and Implementing Urban Proposals

- ❏ Learn effective pitching techniques for presenting Urban projects
- ❏ Successful case studies of big data applications in urban development
- ❏ Network with industry experts to enhance collaboration opportunities

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EXPERTS

Our mentors are experienced professionals from top firms worldwide, with a strong background in Urban Planning & Geospatial analytics and involvement in diverse, high-impact projects.

Maria Augusta Kroetz

Mobility Planner

Urban AI Specialist

☐ Systematica

Kriti Nirmal

Urban Policy Analyst

Digital Governance Specialist

Ministry of Housing and Urban Affairs

Government of India

Pushkar Runwal

Teaching Associate

Urban Technology Consultant

THE URBAN LAB

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TESTIMONIALS

Vishal Shah

Founder & Principal Architect
Aangan Collaborative LLP

The 'Climate AI' workshop by @L.A.B.S. was an eye-opener on how technology and sustainability intersect. The hands-on approach made complex topics easy to grasp, and the collaborative environment sparked great discussions. If you're serious about using AI for urbanism, joining @L.A.B.S. will be a game changer!

Anushka Shetty

Final Year Student - Balwant Sheth School of Architecture, Mumbai

My experience with the urban design module at @L.A.B.S. has been incredibly rewarding! Exploring innovative software for data-driven design was both enjoyable and engaging. I enhanced my design skills and learned to represent data in eye-catching ways. Mastering these tools will benefit my future projects and seamlessly integrate data analysis into my designs. Overall, this journey at @L.A.B.S. reignited my passion for creative and analytical design strategies!

Mehar Kalra

Project Engineer - CEPT Research & Development Foundation

Engaging with @L.A.B.S. has been a true technological awakening. Their insights into how AI and Big Data are revolutionizing urban planning revealed the potential for smarter, data-driven decision-making. I learned about practical applications and scaling these technologies to address real-world urban challenges. This experience deepened my appreciation for the vital role technology plays in shaping adaptive, future-ready cities!

Manmath Dhongle

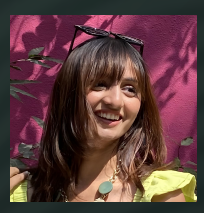
Master Student - D.Y.Patil School, School of Architecture, Navi Mumbai

I had a fantastic time at the workshop at DY Patil School of Architecture with @L.A.B.S., where I discovered how AI can transform our understanding of urban environments! I didn't just work with AI; I lived it! We explored how AI breaks down different parts of a city into colorful sections, making analysis fun and easy. The AI-generated visuals really brought the layout to life. Overall, it was an enlightening experience, and I loved the insights shared during the session!

Akshat Agarwal

Final Year Student - Balwant Sheth School of Architecture, Mumbai

I learned more in three months than in my entire four years of bachelor's! Attending the course at @L.A.B.S. was incredibly enriching. From extracting data with Google Maps and Google Earth Engine to mastering data representation, every moment was packed with knowledge. The highlight was critically examining how data is represented, allowing me to create various maps and determine which ones work best for different data types. I highly recommend this course to anyone interested in advanced urbanism!



Dhruvi Rathod

Master Student - IDPT SCET School of Architecture, Surat

I want to express my heartfelt gratitude for the fantastic workshop on AI workflows for architects at @L.A.B.S.! The sessions on AI models and their practical applications were enlightening and fun. The hands-on activities sparked my creativity and provided valuable insights that will elevate my future projects. Thank you for such an amazing experience that turned complex concepts into exciting possibilities!

PROGRAM INVESTMENT

INDIA

Total Program Fee

₹ 65,000

(Incl. Taxes)

ABROAD

Total Program Fee

$ 800

(Incl. Taxes)

Payment Types Accepted

EMI Options Available

If you need to Avail EMI Options Reach out to us and
our support team will guide you

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LABS

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