BROCHURE

SYMBIOSIS INSTITUTE OF GEOINFORMATICS

MSC. DATA SCIENCE AND SPATIAL ANALYTICS



2025 2027

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SYMBIOSIS INTERNATIONAL UNIVERSITY

Symbiosis International (Deemed University), established in 2002 by Prof. Dr. S.B. Mujumdar, is a leading multidisciplinary institution guided by the philosophy "Vasudhaiva Kutumbakam - The World is One Family." With students from over 85 countries, SIU fosters a globally diverse learning environment that combines academic excellence, innovation, and holistic development.

Offering programs across Management, Law, Engineering, Health Sciences, Humanities, Design, Media, and Computer Studies, SIU promotes interdisciplinary learning and industry readiness. Through research initiatives, international collaborations, modern infrastructure, and strong placement support, the University prepares students to succeed in a dynamic global landscape.



SYMBIOSIS INSTITUTE OF GEOINFORMATICS

Symbiosis Institute of Geoinformatics (SIG), a constituent institute of Symbiosis International (Deemed University), Pune, is a leading institution in Geospatial Science and Technology. Established in 2004, SIG is dedicated to excellence in education and research, offering a dynamic learning environment that integrates geospatial technologies, Data Science, and advanced analytical approaches.

SIG offers specialized postgraduate programs in Geoinformatics and Data Science & Spatial Analytics, combining GIS, Remote Sensing, Artificial Intelligence, Machine Learning, and Big Data technologies. Through modern laboratories, industry collaborations, internships, research opportunities, and strong placement support, SIG equips students with the skills and global perspective required for careers in geospatial technology, analytics, and Data Science.



Prof. Dr. TARUN PRATAP SINGH
PhD., M.Phil. (Engr.), M.Sc., MS (Paris University VI)
Professor and Director

DIRECTOR'S MESSAGE

The demand for Data Science and Spatial Analytics professionals continues to grow as industries increasingly rely on data-driven decision-making and geospatial intelligence. Recognizing this need, Symbiosis Institute of Geoinformatics (SIG), a constituent institute of Symbiosis International (Deemed University), was established to develop skilled professionals capable of addressing emerging global challenges.

The M.Sc. Data Science & Spatial Analytics programme at SIG has been designed in consultation with leading academicians, scientists, and industry experts. By integrating Data Science, Artificial Intelligence, Machine Learning, and Spatial Analytics, the curriculum equips students with future-ready skills aligned with evolving industry requirements. Supported by strong industry collaborations, practical learning opportunities, and an excellent placement record, SIG continues to prepare graduates for successful careers across diverse sectors in India and abroad.







ABOUT MSC DATA SCIENCE & SPATIAL ANALYTICS

The M.Sc. in Data Science and Spatial Analytics is designed to create highly skilled professionals with expertise in IT, data management, and geospatial analytics to meet global industry demands. It is an 80-credit programme with assessments based on relative performance, ensuring academic rigor and excellence. A key highlight is the mandatory industry project in the 4th semester, which enables students to apply their knowledge to real-world challenges and become industry-ready.

The curriculum blends strong foundations in programming, statistics, and data visualization with advanced exposure to Artificial Intelligence, Machine Learning, Deep Learning, and Big Data. Students are encouraged to work on independent projects, publish in scientific journals, and gain practical insights through industry collaborations. This approach ensures graduates achieve high proficiency, innovation, and research capability in data-driven problem solving.







ABOUT MSC DATA SCIENCE & SPATIAL ANALYTICS (DUAL DEGREE)

The M.Sc. Data Science & Spatial Analytics (Dual Degree) is a unique, two-year global master's program delivered jointly by Symbiosis Institute of Geoinformatics (SIG), India and RUDN University, Moscow, Russia. It combines advanced data analytics with cutting-edge space science and AI applications.

Program Structure

- Year 1 (SIG, India): M.Sc. in Data Science & Spatial Analytics
  - Focuses on core Data Science, Machine Learning, Spatial Statistics, Python/R, Big Data, and Cloud Analytics.
- Year 2 (RUDN University, Russia): M.Sc. in Technical Systems Control – AI & Space Science
  - Focuses on Artificial Intelligence, advanced system control, satellite technology, and global geospatial applications.

PROGRAMME STRUCTURE

SEMESTER 01

FOUNDATION COURSES

01	Mathematics for Spatial Sciences
02	Principles and Practices of Data Protection
03	Statistics and Probability
04	Python for Data Science
05	Business Communication
06	Introduction to Database Management System
07	Research Methodology in Computational Sciences
08	Introduction to Geospatial Technology

SEMESTER 02

CORE DATA SCIENCE COURSES

01	Machine Learning
02	Spatial Database Management
03	Data Driven Governance
04	Data Analysis Using Python
05	Computer Vision
06	Programming for Computational Sciences
07	Big Data Analysis
08	Advance Python Programming for Spatial Analytics*
09	Programming for Spatial Sciences
10	Geospatial Analytics
11	Spatial Big Data and Storage Analytics

SPECIALIZATIONS

Artificial Intelligence

Explore intelligent systems, machine learning and deep learning.

GeoIntelligence

Discover geospatial analytics and location intelligence.

PROGRAMME STRUCTURE

SEMESTER 03

ADVANCED & SPECIALIZED COURSES

COURSE NAME

01	Deep learning
02	Artificial Intelligence
03	Spatial Modeling
04	Block Chain Technology
05	Introduction to Natural Language Processing
06	Operations Research and Optimization Techniques
07	Machine Learning for Remote sensing
09	Web GIS
10	Citizen Science and Geospatial Technology

ELECTIVES

01	IOT Spatial Analytics
02	Data Driven Banking, Insurance and Finance

SEMESTER 04

INDUSTRY & RESEARCH

01

Industry Project

Work on real-world industry problems and gain practical exposure.

02

Research Project

Undertake independent research, innovation and publication activities.

OUR FACULTY



Prof. (Dr.) T.P. Singh
Professor and Director



Dr. Vidya Sandeep Patkar (Kumbhar)
Associate Professor &
Deputy Director



Dr. Dharmaveer Singh
Assistant Professor &
Head of Department
(Geoinformatics)



Dr. Navendu A. Chaudhary
Professor



Dr. Sandipan Das
Assistant Professor



Dr. Rajesh K. Dhumal
Assistant Professor
(Computer Science)

OUR FACULTY



Dr. Veena Parihar
Assistant Professor & Head of Department
(Data Science)



Dr. Gauri Deshpande
Assistant Professor



Neeta S. Nandgude
Assistant Professor



Dr. Sahil K. Shah
Assistant Professor



Mr. Atul Jadhav
Teaching Associate

Campus Recruitment Process

From Company proposal to Offer Letter

1

INVITATION TO COMPANIES

- Outreach to potential recruiters
- Hiring requirements collection

2

STUDENT REGISTRATION

- Eligibility verification
- Resume submission

3

PRE-PLACEMENT TALK

- Company presentation
- Job role briefing

4

SELECTION PROCESS

- Tehnical/ Aptitude assessment
- Group Discussion/ Interview

5

FINAL SELECTION & OFFER

- Merit-based Selection
- Internship/Joining Formalities

PAST RECRUITERS

ATKINSREALIS

GIANTLEAP

VANDERLANDE

AXA

BANDHAN BANK

DHL

VERISK

CLOUDLEX

MEDLINE

CELLHUB

ICERTIS

MU SIGMA

BIZMETRIC

HERE TECHNOLOGIES

AMERICAN EXPRESS

MEARSK

FIRSTCRY

ESRI INDIA

LS DIGITAL

HINDALCO INDUSTRIES

CRG SOLUTIONS

NIELSENIQ

LATENT VIEW

CAPGEMINI

TECHOLUTION

CODITAS

DATA SUTRAM

DIACTO

ECLERX

AMDOCS

SG ANALYTICS

DATA AXLE

COUPA

KPOINT

PARKAR

Student Profiles



Abhipsa Mohapatra

B.SC MATHEMATICS (HONS.)

SUMMER PROJECT :

Machine learning based formula 1 tyre strategy optimization

SKILLS:

SQL,PYTHON,NUMPY,PANDAS, ML



Abinash Mallick

B.TECH

SUMMER PROJECT:

Rice Yield Prediction Using Environmental Variables From Google Earth Engine and Machine Learning: A Case Study of Andhra Pradesh

SKILLS:

SQL,PYTHON,NUMPY,PANDAS, ML ,GOOGLE EARTH ENGINE



Adil Abdullah Mahin

BACHELOR'S IN STATISTICS & ECONOMICS

SUMMER PROJECT:

Rice Yield Prediction Using Environmental Variables From Google Earth Engine and Machine Learning: A Case Study of Andhra Pradesh

SKILLS:

SQL, PYTHON,NUMPY,PANDAS, ML , MATPLOTLIB, SEABORN



Aditi Trivedi

BACHELOR'S IN BIOTECHNOLOGY

SUMMER PROJECT:

AI-BASED BATTERY HEALTH PREDICTION AND SMART CHARGING OPTIMISATION FOR ELECTRIC VEHICLES

SKILLS:

SQL, PYTHON,NUMPY,PANDAS, ML , MATPLOTLIB, SEABORN, R

Student Profiles



Aditya Singh

BACHELOR'S IN ENVIRONMENT SCIENCES

SUMMER PROJECT :

Assessing the nature of potential groundwater zones through ML algorithm in the northern region of Gujarat, India

SKILLS:

SQL, PYTHON,NUMPY,PANDAS, ML , MATPLOTLIB, SEABORN, ARCGIS PRO , GOOGLE EARTH ENGINE



Bhargavi Pandey

BACHELOR'S IN MATHEMATICS

SUMMER PROJECT:

Real time Fraud detection ecosystem

Skills:

Python,Numpy ,Pandas , Sql



Harshad Chandrakant Babar

BACHELOR'S IN COMPUTER SCIENCE

SUMMER PROJECT:

AI powered changes in geopolicies and human migration

SKILLS:

SQL, PYTHON,NUMPY,PANDAS, ML , MATPLOTLIB, SEABORN, ARCGIS PRO , QGIS



Karthikeya Bhamidipati

BACHELOR'S IN COMPUTER SCIENCE

SUMMER PROJECT:

GeoSentinel-AI

SKILLS:

SQL, PYTHON,NUMPY,PANDAS, ML , MATPLOTLIB, SEABORN, ARCGIS PRO , QGIS , PYTORCH, TORCHGEO, FASTAPI, U-NET, NEXT.JS, DOCKER, DEEPLABV3+, SENTINEL-2, GIS ANALYTICS

Student Profiles



Dhruvi Brahmbhatt

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT:
Autonomous Multi-Agent AI Business Copilot using Retrieval-Augmented Generation and Generative AI.

SKILLS:
Python, Generative AI, RAG, LangChain, LangGraph, Multi-Agent AI, Pandas, NumPy, Machine Learning, Time-Series Forecasting, FastAPI, React, MongoDB.



Hiya Desai

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT :
AI-based Deepfake Detection using Frequency- Domain Learning and Explainable Analysis

SKILLS:
SQL , python , statistics, ML , Numpy , pandas, matplotlib, seaborne,sklearn



Raju Ghyatidak

BACHELOR'S IN MATHEMATICS

SUMMER PROJECT :
GeoTwin Flood: A 3D Terrain Based Urban Digital Twin for Flood Risk Assessment and Decision Support in Pune

SKILLS:



Isha Sushil Rambhal

BACHELOR'S IN GEOLOGY

SUMMER PROJECT:
GeoAI-Based Assessment of Urban Healthcare Accessibility and Decision Support System for Pune Municipal Corporation Using GIS and Network Analysis

SKILLS:
ArcGIS Pro & QGIS | Python (GeoPandas, Pandas) & Machine Learning | GeoAI & Spatial Analysis | Streamlit Dashboards | SQL, Git & Linux

Student Profiles



Ishan Singh

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT:
VentureDecision: An AI-Powered Startup Intelligence and Investment Decision Support System

SKILLS:
SQL, PYTHON,NUMPY,PANDAS, ML , MATPLOTLIB, SEABORN, ARCGIS PRO , QGIS,,REACT,FASTAPI,SWAGERUI,EXCEL,VITE,OLLAMA INTEGRATION AND AXIOS



Harshita Joshi

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT:
Assessing Temporal Domain Shift in ICU Mortality Prediction Using Baseline Machine Learning and Sequential Models

SKILLS:
SQL , PYTHON , ML ,NUMPY , PANDAS, MATPLOTLIB, SEABORN,POWER BI, TABLEAU,DOCKER,AWS,SKLEARN



Shravani Vishal Kate

B.B.A (COMPUTER APPLICATIONS)

SUMMER PROJECT :
AI-Powered Supply Chain Disruption Detection and Resilience Scoring Ecosystem for Indian MSME Networks

SKILLS:
SQL, PYTHON,NUMPY,PANDAS, ML , MATPLOTLIB, SEABORN,



Kavya Agarwal

BACHELOR'S IN SCIENCE(MATHS,STATS,ECON)

SUMMER PROJECT:
NoteVerse AI - A Personalized AI Study Assistant using RAG and LLMs

SKILLS:
Python, RAG & LLMs, Vector Search, Machine Learning, SQL, Streamlit, RAGAS, Git

Student Profiles



Manas Ranjan Patra

BACHELOR'S IN GEOLOGY

SUMMER PROJECT :

Development of a Geospatial Heat Risk Assessment and Decision Support Dashboard for Pune City

SKILLS:

Python | R | SQL | GIS & Remote Sensing | Google Earth Engine | ArcGIS Pro | QGIS | GeoPandas | Rasterio | Xarray | Spatial Analysis | Spatial Databases



Madhura Nigudkar

BACHELOR'S IN COMPUTER SCIENCE

SUMMER PROJECT:

Evaluating temporal fusion transformers for survival prediction in cardiovascular ICU cohorts cardiovascular ICU cohorts

SKILLS:

SQL , python , Machine Learning ,numpy , pandas, matplotlib, seaborne,sklearn, data analysis, EDA, Power BI, Tableau, Deep learning, NLP



Nimisha Singh

BACHELOR'S IN DATA SCIENCE & AI

SUMMER PROJECT :

A Retrieval-Augmented Conversational BI System for Automotive Dealership Analytics (Text-to-SQL Query Generation with Confidence Scoring, and Supporting

SKILLS:

SQL , python , Machine Learning ,numpy , pandas, matplotlib, seaborne, RAG ,NL2BI, LLM, API Key , FastAPI



Ninad Choudhari

BACHELOR'S IN BIOTECHNOLOGY

SUMMER PROJECT :

Autocheck vision : intelligent Object detection using Yolo v11

SKILLS:

Python , R language , SQL , Mongodb , Power Bi ,Microsoft Azure ,Numpy, Pandas

Student Profiles



Nirmit Gupta

BACHELOR'S IN ZOOLOGY

SUMMER PROJECT :
AI-Enabled Decision Support System for Revenue and Operations Optimization of Short-Term Rental Properties

Skills
Python, Sql, Numpy, Pandas , matplotlib, Streamlit, ML



Piyush Bhati

BACHELOR'S IN SCIENCE(PCM)

SUMMER PROJECT:
ResearchForge — Agentic AI Research Assistant using LangChain Agents, NLP, RAG, and LLMs

Skills
Python, Sql, Numpy, Pandas , matplotlib, Streamlit, ML,RAG



Praneet Reddy Mukarla

B.TECH (ELECTRONICS AND COMPUTER SC)

SUMMER PROJECT :
Traffic Risk and Congestion Intelligence System for Unstructured Indian Traffic

SKILLS:
Python, Machine learning, Computer vision.



Nikhat Rajbhara

BACHELER'S IN COMPUTER APPLICATION

SUMMER PROJECT :
Encoding Dynamic Time-Series Data for Transformer-Based Survival Architectures in Critical Care

Skills:
SQL , python , ML ,numpy , pandas, matplotlib, seaborn,pOWER bi,DOCKER,AWS,sklearn

Student Profiles



Aarshad Rathod

B.TECH IN INFORMATION TECHNOLOGY

SUMMER PROJECT :

Downscaling Rainfall over India using Explainable Artificial Intelligence (XAI)

SKILLS:

Python, SQL, Numpy, Pandas, Github,ML, Docker, PoweBI , Tableau , Rest API, Cartopy, Google earth engine



Prerna Amit Redekar

BACHELOR'S IN NANO. SC & BIOTECHNOLOGY

SUMMER PROJECT :

FinSightAI : An AI- Powered Financial Intelligence and Market Signal Analysis Platform

Skills:

Excel and Advanced Excel, Python, SQL,Power BI, Machine Learning



Rudra M Upadhyay

BACHELOR'S IN MATHEMATICS

SUMMER PROJECT :

Airline Passenger Demand Forecasting using Deep Learning LSTM and Spatial Route Visualization

Skills:

Python, SQL,Power BI, ML,Pandas,Numpy



Harnish Savant

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT :

GeoNarrative AI: An Agentic GeoAI Digital Twin for Flood Risk Assessment and Spatial Decision Support

SKILLS:

Python, SQL,Power BI,ML,Pandas,Numpy,GDAL,Github

Student Profiles



Simranpreet Kaur Kang

BACHELOR'S IN MATHEMATICS

SUMMER PROJECT :

LegalMind: An intelligent contract analysis and rewrite platform

Skills:

Sql,Python,ML, Numpy, Pandas , RAG, Langchain,Langgraph,API key,LLM, Streamlit,Github,Canva



Sipra Patra

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT :

GeoAI-Based Compound Flood-Heat Hazard vulnerability assessment using remote sensing, machine learning and socio-infrastructure indicators

Skills:

Sql,Python,ML, Numpy, Pandas , GIS, Google Earth Engine, Streamlit



Tanuj

BACHELOR'S IN SCIENCE(PCM)

SUMMER PROJECT:

Air Quality Index Forecasting using A Temporal Convolutional Network

Skills:

Sql,Python,ML, Numpy, Pandas , PowerBI



Nikhil Dattaray Tarate

BACHELOR'S IN MATHEMATICS

SUMMER PROJECT:

Fairness-Aware Optimization and Interpretability In High-Frequency Clinical Time Series

Skills:

Sql,Python,ML, Numpy, Pandas , Matplotlib, Seaborn

Student Profiles



Yash Malik

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT :

Sentiment Analysis of Hindi – English (Hinglish) Code-Switched texts

Skills:

Python, SQL, R, Microsoft Excel, Google BigQuery, Apache Spark, Google Cloud Platform (GCP), MySQL, PostgreSQL, Google BigQuery, Jupyter Notebook, Google Colab, MQTT



Anushka Vijay Shinde

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT :

Spatial Analysis of Urban Air Quality Patterns and Land Use Correlation Using Satellite Data and Ground Sensors - A ward level study of Pune, Maharashtr

Skills:

Python, Sql, Numpy, Pandas, Streamlit



Vedant Punekar

B.TECH IN INFORMATION TECHNOLOGY

SUMMER PROJECT :

GeoAI Smart Road Infrastructure Monitoring

Skills:

Python,DSA,OOPS,SQL,Machine Learning,Deep Learning,Computer Vision,MLOps,ArcGIS,GeoAI,QGIS



Tanishka Sharma

BACHELOR'S IN COMPUTER APPLICATION

SUMMER PROJECT :

Rag Based Ai Teaching Assistant

Skills:

Python, Data Science, GenAI, LLM, RAG, NLP, Whisper

Student Profiles



Annanya Sharma

BACHELOR'S IN ELECTRONIC SCIENCE

SUMMER PROJECT :
GridSense — ML-Based Electricity Demand Forecasting for India

Skills:

Python, SQL, Big Data, ML, Time Series forecasting, Computer Vision, Cloud Computing(Azure),ArcGIS



Mr. Prashant Parekar
PLACEMENT SUPERVISOR



Simranpreet Kaur Kang
PLACEMENT HEAD



Abhipsa Mohapatra
DEPUTY PLACEMENT HEAD

PLACEMENT COMMITTEES

ALUMINI COMMITTEE



Shravani Kate
COMMITTEE HEAD

BROCHURE COMMITTEE



Nikhat Rajbhara
COMMITTEE HEAD

CALLING- MAILING COMMITTEE



Hiya Desai
COMMITTEE HEAD

OUTREACH COMMITTEE



Ishan Singh
COMMITTEE HEAD



Contact Us

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Office Hours
Monday to Saturday: 9:00 AM – 5:00 PM
Closed on Sundays and Public Holidays

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