

Environment Data Analytics using R

May 22-26, 2023

Why this course?

Sustainable environmental management is the need of the hour with environmental degradation and thus crisis leading to serious threat to humanity. In the era of climate change, many ecosystems are gradually reaching towards tipping points that would negatively impact the environmental services provided to humanity. Therefore, there is need to assess and monitor the ecosystem health which require use of advanced analytical techniques. Environmental Analytics offers a rich tapestry of techniques for deeper understanding and management of complex natural environment. The studies on different facets and processes of environment are increasingly data rich with the great need of applying various advanced techniques to uncover and extract hidden meaningful pattern that could be of assistance in sustainable environmental management.

At its core, environmental analytics include assemblage, management, and analysis of large spatio-temporal datasets for their translation into information that eventually could be used by the decision makers for policy making. Thus, its applications are very wide and required across almost several sub-disciplines and professions ranging from use of basic statistics to deep learning and artificial intelligence concepts. In this avenue of finding meaningful pattern in environmental data, one of the most common tools used for environmental analytics is R programming language. R programming language is open-source and has become very powerful over time with the contribution of packages by several experts in the field of environmental analytics.

The course aims to provide basic understanding of statistics and machine learning approaches with extensive hands-on training to analyze environmental data using R programming language.

What will you learn?

On successful completion of the course, participants will:

- Get familiar with R programming language
- Perform environmental data analysis using R
- Apply various algorithms for extracting information from environmental datasets
- Visualize datasets and outputs in R

Who should attend?

Participants from NGOs, academicians, early career researchers and PhD scholars working in the field of environmental science and allied sectors with basic knowledge of statistics.





Pedagogy

The course is intended to be delivered through lecture and hands-on sessions. Lecture will assist in enhancing the knowledge of the basic and advanced statistics including machine learning, while hands-on tutorial will give exposure to how to use the R for analyzing environmental data.

Certificate of Participation

The participants will be awarded a certificate of participation after successful completion of the 5 days training.

Schedule

Date and Time	Session
May 22, 2023 9:00 AM - 4:30 PM	Lecture: Exploratory Data Analysis Hands on session: Installation of R, Data importing, visualization, basic statistical analysis in R
May 23, 2023 9:00 AM - 4:30 PM	Lecture: Multivariate interdependence technique: PCA, Cluster Analysis Hands on session: Analysis of multivariate environmental data in R, Getting started with individual/group project for analysing environmental data, formulating objectives for the study
May 24, 2023 9:00 AM - 4:30 PM	Lecture: Multivariate Dependence techniques: Regression Hands on Session: Application of Regression in environmental studies using R, Exploring dataset in R for the project
May 25, 2023 9:00 AM - 4:30 PM	Lecture: Basics of Machine Learning Hands on session: RF and SVM for classification and regression using R Using one or more techniques for analysing the dataset for the project and interpreting them
May 26, 2023 9:00 AM - 4:30 PM	Presentation of results by the participants followed by group discussion. <ul style="list-style-type: none">• Closing session• Wrap-up, followed by group reflection, written feedback, and presentation of certificates.

Profile of Course Directors



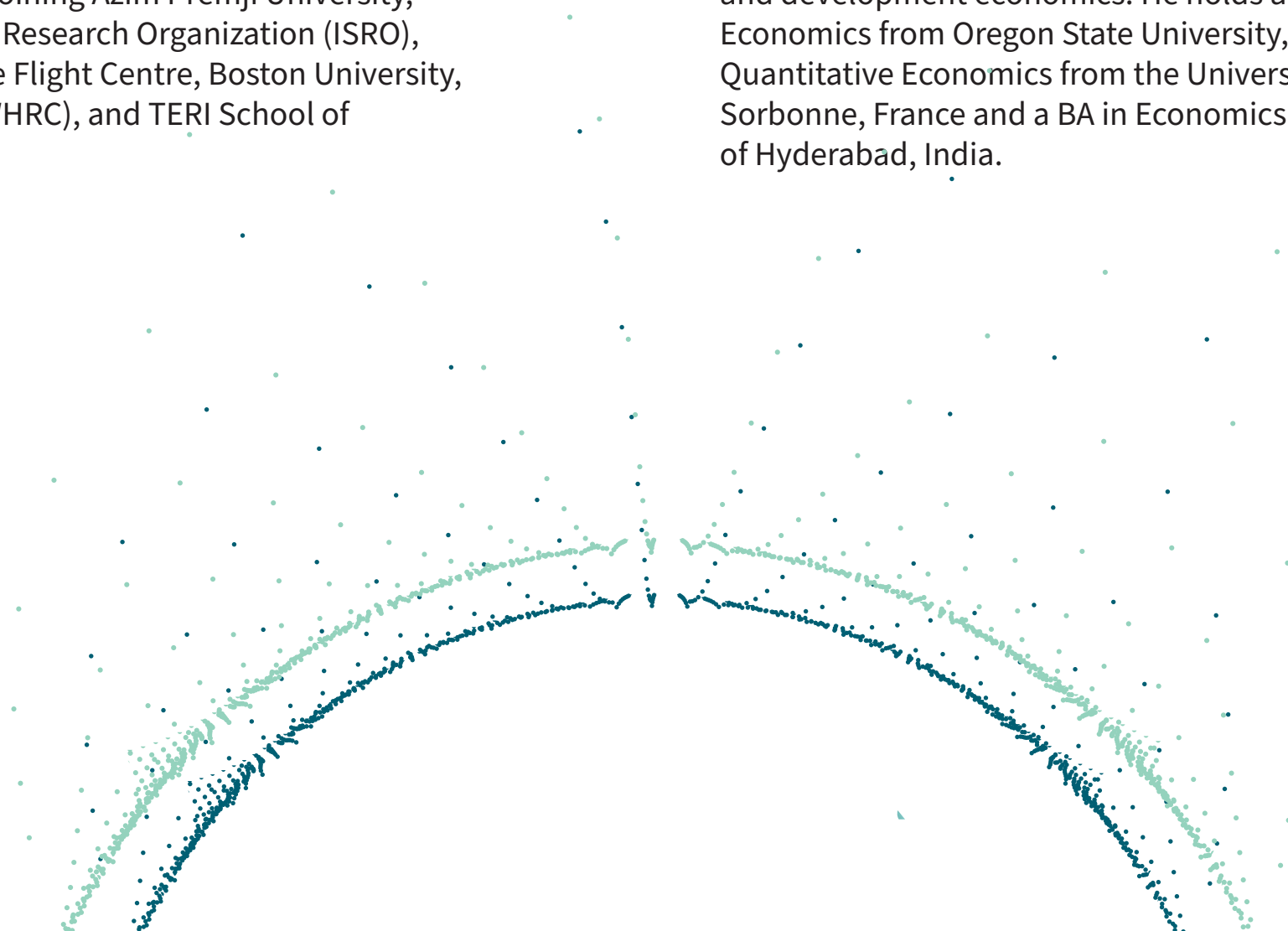
Neeti

Neeti is an associate professor with experience of more than 20 years in the field of data analytics and geospatial technology. Her research focuses on using various AI based approaches and geospatial technology in the field of forestry, agriculture, and disaster management. Prior to joining Azim Premji University, she has worked at Indian Space Research Organization (ISRO), Clark University, Goddard Space Flight Centre, Boston University, Woods Hole Research Center (WHRC), and TERI School of Advanced Studies (TERI SAS).



Kedar Kulkarni

Kedar is an assistant professor in economics at the Azim Premji University. He teaches courses in climate change, statistics and R programming. His research interests lie at the nexus of agricultural economics, environmental economics, and development economics. He holds a Ph.D in Applied Economics from Oregon State University, USA, a Master's in Quantitative Economics from the University of Paris Pantheon-Sorbonne, France and a BA in Economics from the University of Hyderabad, India.



Fee Structure

- INR 5900 For Individuals
- INR 1180 For partner organisations of Azim Premji University and Azim Premji Foundation

Notes: Rates are inclusive of all taxes

Partial fee waiver available for deserving research scholars

Accommodation and other logistics

The university can arrange accommodation for the 05 days at an additional cost of Rs 5900 (including GST) for the entire stay. Request for the same must be made at time of application. Alternatively, participants can also make their own arrangements. Similarly, other costs, such as travel to and from Bangalore, local travel, food must be borne by participants as well.

Important Dates

Last date for submission: Mar 21, 2023

Announcement of Results: Mar 28, 2023

Last date for payment: Apr 15, 2023

Workshop duration: May 22, 2023 – May 26, 2023

Contact us

For any queries, please write to environment.workshop@apu.edu.in

Know more:

<https://azimprejiuniversity.edu.in/cc/environmental-analytics-R/may-2023>

About Azim Premji University

Azim Premji University was established as a not for-profit, private university under the Azim Premji University Act 2010. The University has a clear social purpose of working towards a just, equitable, humane and sustainable society. Azim Premji University plays a critical role in developing new talent, building capacity in existing functionaries and creating domain knowledge in the fields of education and in development. The Azim Premji Foundation is the sponsor of the University. The roots of Azim Premji University lie in the learning and experience of a decade of work in elementary education by Azim Premji Foundation. The University is one of the Foundation's key responses to the challenges confronting the education and development sectors in India. The University offers Bachelors' degrees in Physics, Biology, Maths, Economics and Humanities and Masters' degrees in Education, Development, Public Policy and Governance and LLM (Law and Development).

Apply now

Registration link:

bit.ly/environmental-analytics-R

Scan the QR code to apply

