

Democratising Forecasting Initiative:

A series of workshops on data analytics and forecasting using R in developing countries

What is the project about?

A series of workshops in developing economies to promote the importance of forecasting and ‘train the trainers’ in the form of university students, academics and professionals on the principles of forecasting using R software to support decision making. The workshops are designed for 3 days and are free of charge. The ultimate goal of this project is to train 400 individuals, over 5 years in 20 countries in the world. Countries are selected according to the World Bank Data with focus on countries with lower and lower-middle income.

The workshops are sponsored by [International Institute of Forecasters](#) and organised by Dr. Bahman Rostami-Tabar, [Cardiff University](#), UK.

Benefits to the participants and forecasting community

1. Transfer of knowledge and skills on “forecasting” which can be served to make better decisions that may have positive direct impact on their society;
2. Provide an up-to-date training in data analysis and forecasting using R;
3. Create a research network among target countries with a focus on analytics for social good;
4. Participants will receive a certificate delivered by IIF and Cardiff University.

What participants learn in the workshop?

Assuming basic knowledge of statistics and, participants will learn:

- The importance of forecasting and its relation to decision making in public organizations, private sector, governments, Health, Humanitarian Organizations, etc;
- How to prepare, manipulate and visualize data using R;
- The theory behind forecasting models;
- How to produce forecasts and evaluate their accuracy across a range of statistical forecasting models using real-world data;
- How to use R functions and their packages related to forecasting models;
- How to visualize, export and report results for interpretation and insights using RMarkdown.

This workshop is for you if you:

- are academic, student and want to expand your knowledge on forecasting using R software;
- are practitioner and want to learn how to analyse, data and produce forecasts to inform decisions.

Prerequisites:

- Basic knowledge in statistics;
- No knowledge of forecasting is assumed;
- No prior knowledge of R is assumed.

Sponsored by:



International Institute of Forecasters

About the Instructor:



Dr. Bahman Rostami-Tabar is an Assistant Professor of Management Science at Cardiff Business School, Cardiff University, UK.

He holds a Ph.D. in Industrial engineering and his research addresses social impacts of forecasting and analytics and forecasting issues in supply chains.

Bahman Rostami-Tabar

Cardiff Business School, Cardiff University, UK

Email Address: rostami-tabarb@cardiff.ac.uk

Guest speakers from organisations:



Australian Government
Department of Agriculture
and Water Resources
ABARES

Program

Start: 09:30 a.m.

End: 04:45 p.m.

Refreshment breaks:

- Morning: 11:15 - 11:30
- Afternoon: 03:15 – 03:30 p.m.

Lunch: 01:00 p.m. – 02:00 p.m.

Topics

Priming: Webinar, 2 weeks before the workshop

Day 1

Essentials in R

Reports with RMarkdown

Data preparation

Data manipulation

Data visualisation

Day 2

Forecasting and decision making: Guest lectures

Time series patterns

Forecaster's toolbox: time series graphics, simple forecasting methods, residual diagnostics, accuracy measurement

Day 3

Exponential smoothing models

ARIMA models

Regression

Reference:

[Forecasting: Principles and Practice](#) (2018), *Rob J Hyndman and George Athanasopoulos*.

[R for Data Science](#) (2018), *Garrett Grolemund and Hadley Wickham*.