

Workshop on Time Series Analysis in Data Science (Tentative dates: 20 - 22, December 2017)



The Department of Statistics & Computer Science, University of Peradeniya (<http://www.pdn.ac.lk>), and the Board of Study in Statistics & Computer Science, [Postgraduate Institute of Science \(PGIS\)](#), Sri Lanka are proposing to conduct a *Workshop on Time Series Analysis in Data Science* in collaboration with the [International Society for Business and Industrial Statistics \(ISBIS\)](#) in December 2017. The main aim of the workshop is to train participants to reach a higher level of scientific activity, both in terms of their teaching, research and publications. This workshop will be partially supported by the Postgraduate Institute of Science, Sri Lanka.

OVERVIEW OF THE WORKSHOP

Time Series Analysis is one of the important branches of Statistics and is an integral aspect of Data Science, with numerous applications in Business and Industry and in related STEM disciplines (Biomedicine, Finance, Information Technology, Manufacturing, Marketing, Pharmaceuticals, etc.). Descriptive and Predictive Time Series Data Analytics using up-to-date methodology and computing is essential for researchers and professionals in these fields. Therefore, workshops or training programmes on the latest developments in time series analysis will improve the capacity building in Sri Lankan postgraduate students, research fellows and junior academic staff members. Further, this programme will help to mentor them in order to (a) elevate their research to a level that enables publication in international, peer-reviewed journals, and (b) teach the latest developments to the next generation of students, thus enhancing the overall discipline. There is also a need for training professionals who may have graduate degrees in statistics or related disciplines but need the advanced knowledge to be productive in a competitive global workplace. This workshop is a step towards building this capacity.

COURSE OUTLINE

Unit 1: Time Series Analysis in Data Science

Day 1: 20th December, 2017

1. Descriptive and Predictive Analysis via Linear Models.
2. State Space Modeling - Dynamic Linear and Nonlinear Models.

Day 2: 21st December, 2017

1. Nonlinear Models for Financial Data Analysis.
2. Clustering and Biclustering Methods for Time Series.

Unit 2: Effective Scientific Writing

Day 3: 22nd December, 2017 (half-day)

Effective writing of scientific papers for international peer-reviewed publications

Note: Interactive hands-on computing using open source software (like R) for analysis and visualization will be integrated into the workshop on the first two days. Applications from different areas will be considered to motivate the problems and illustrate the methods.

RESOURCE PERSONS

[Prof. Nalini Ravishanker](#), Department of Statistics, University of Connecticut, USA

[Prof. N. Balakrishna](#), Department of Statistics, Cochin University of Science and Technology, India

Two Demonstrators for laboratory help, Dept. of Statistics & Computer Science, Uni. of Peradeniya, Sri Lanka

TARGET PARTICIPANTS AND SELECTION PROCEDURE

Targeted participants are postgraduate students, professionals and Junior academic staff members of universities who need a knowledge in this field for their research and teaching. The number of participants is limited to 40-45 for unit 1, and they should have a prerequisite knowledge in basic statistical methods to grasp the workshop material. Participants for unit 1 will be selected from the nominated list of the respective universities/institutions, and they can also participate to unit 2. Some additional 40-50 participants will be selected only for unit 2.

COURSE FEE

1. Participants for unit 1 and 2: PGIS and University Students: Rs. 1500/-,
Other participants: Rs. 2000/-
2. Additional participants for unit 2 only: Rs. 1000/-

ADVISORY COMMITTEE

1. Prof. Namal Priyantha, Director, Postgraduate Institute of Science, University of Peradeniya, Sri Lanka
2. Prof. P. Wijekoon, Department of Statistics & Computer Science, University of Peradeniya, Sri Lanka
3. Prof. Nalini Ravishanker, Department of Statistics, University of Connecticut, USA & Pres-elect, ISBIS
4. Dr. Amalka Pinidiarachchi, Head, Dept. of Statistics & Computer Science, Univ. of Peradeniya, Sri Lanka