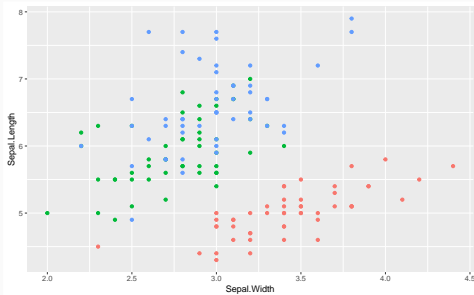


Statistik

CH.1 - Grundlegende Begriffe

SS 2021

Wir geben Impulse



R is a collaborative project with many contributors. Type `'contributors()'` for more information and `'citation()'` on how to cite R or R packages in publications.

one

two

Lecturer

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Tutor

Puwasala Gamakumara

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- Professor of Statistics, Monash University
- Editor-in-Chief, *International Journal of Forecasting*

How my forecasting methodology is used:

- Pharmaceutical Benefits Scheme
- Cancer incidence and mortality
- Electricity demand
- Ageing population
- Fertilizer sales

Unit objectives

- 1 To obtain an understanding of common statistical methods used in business and economic forecasting.
- 2 To develop the computer skills required to forecast business and economic time series data;
- 3 To gain insights into the problems of implementing and operating large scale forecasting systems for use in business.

Teaching and learning approach

Two 50 minute classes and a one 80 minute computer lab session each week for 12 weeks.

RStudio

Key reference

Hyndman, R. J. & Athanasopoulos, G. (2018) *Forecasting: principles and practice*, 2nd edition

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Hyndman, R. J. & Athanasopoulos, G. (2018) *Forecasting: principles and practice*, 2nd edition

[OTexts.org/fpp2/](https://otexts.org/fpp2/)

Hyndman, R. J. & Athanasopoulos, G. (2018) *Forecasting: principles and practice*, 2nd edition

OTexts.org/fpp2/

- Free and online
- Data sets in associated R package fpp2
- R code for examples

Install required packages

```
install.packages("fpp2", dependencies=TRUE)
```

Outline

Week	Topic	Chapter
1	Introduction to forecasting and R	1
2	Introduction to forecasting and R	2
3	Time series graphics & decomposition	3,6
4-5	Exponential smoothing	7
6-8	Forecasting with ARIMA models	8
9-10	Multiple regression and forecasting	5
11	Dynamic regression	9
12	Advanced methods	11

Assessment

- Nine short weekly assignments, worth 2% or 4% each.
- One project due at the end of the semester, worth 20%.
- Exam (2 hours): 60%.

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Assignments	Mon 11:59pm each week	2 or 4% each
Project	Fri 25 May	20%
Final exam	Official exam period	60%

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- Need at least 45% for exam, and 50% for total.

- Includes all lecture notes, handouts, assignments
- Forum for asking questions, etc.
- Assignment submissions

- All students must complete this course by Monday 5 March.

- We will do one chapter at a time throughout the semester.