New 10CP Master coures in the Free Electives:
Sustainability & Artificial Intelligence

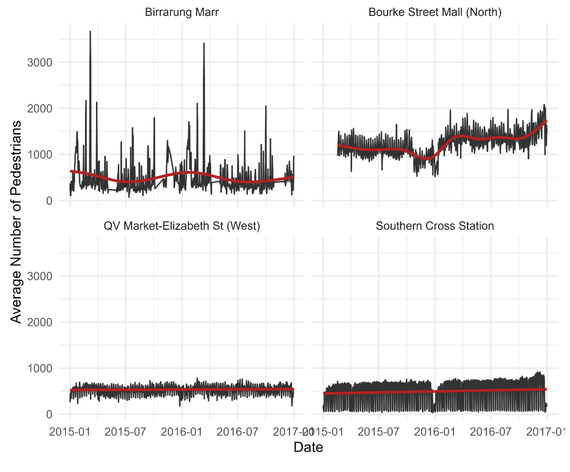
Tuesday: 8:15 (N2)
Wednesday: 12:15 (C402)

NOTE:

This course is not yet visible in PORTA! In the case of your interest, you can apply, however, by searching for the course number

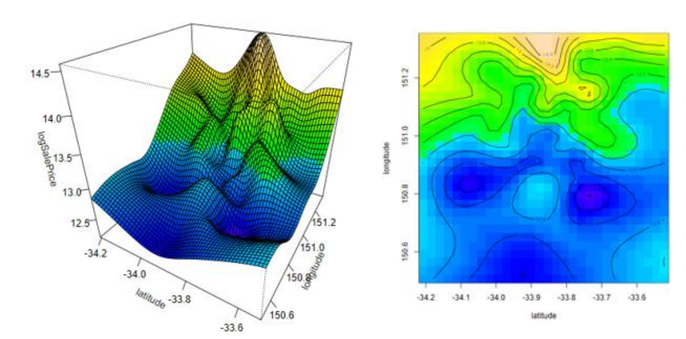
14202616 (Lecture) and 14202617 (Practial Course)

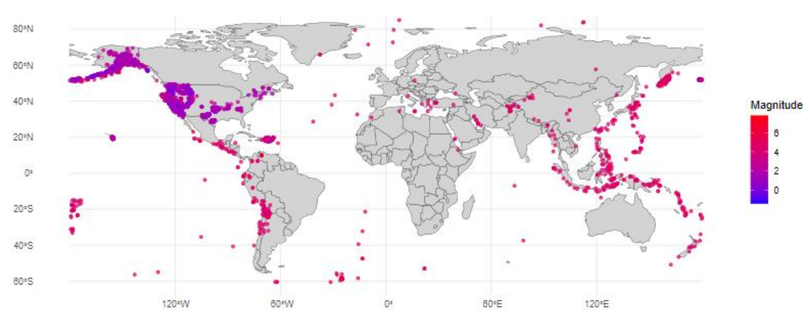
Content: Use of traditional and modern data and analytical approaches (classical approaches and machine learning) for answering sustainability questions.



Topics

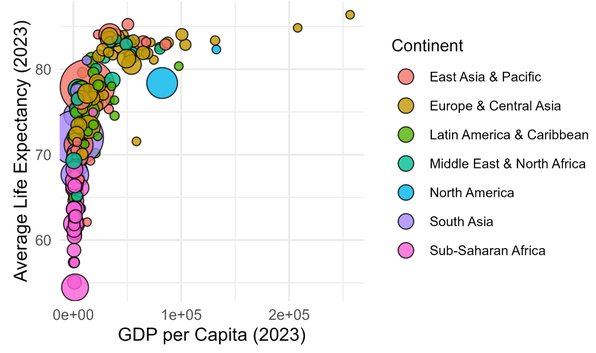
- Introduction to AI, machine learning, and big data
- Data in sustainability (traditional up to sensors)
- Goals of data analytics: Descriptive, explanatory, predictive
- Introduction to prediction and classification in simple and complex data structures
- Overview relevant approaches (e.g., KNN, random forests, support vector machines)
- Overview time series analysis and forecasting
- Overview spatial data science
- Applications (e.g., smart infrastructures, industry 4.0, agriculture, healthcare)





Formal features

- **Lecture** as videos (8 hours)
- **Practical course:** Introduction to R (tidyverse approach) and machine learning with R
- **Group work:** 1) Presentation on an application, 2) Presentation of a machine learning model



Prerequisites: Basics in regression analysis would be helpful but is not necessary

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