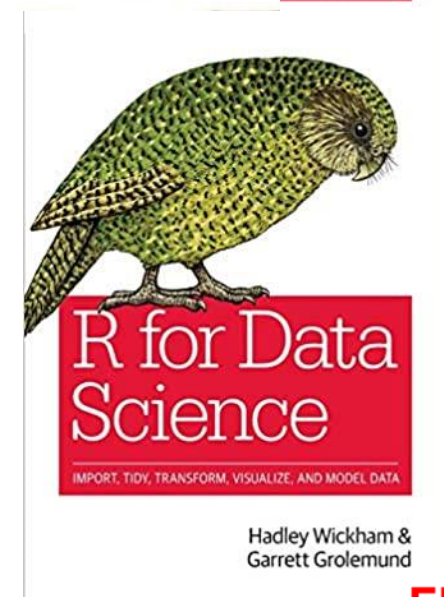
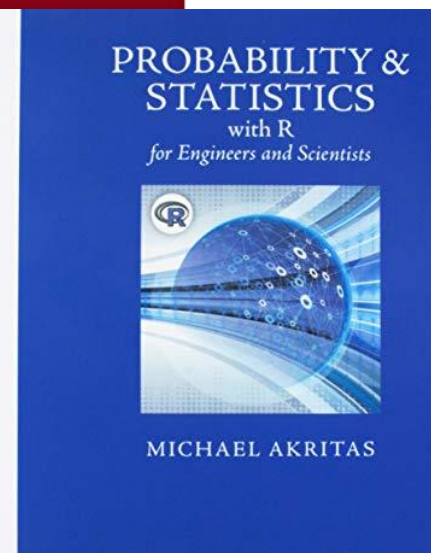
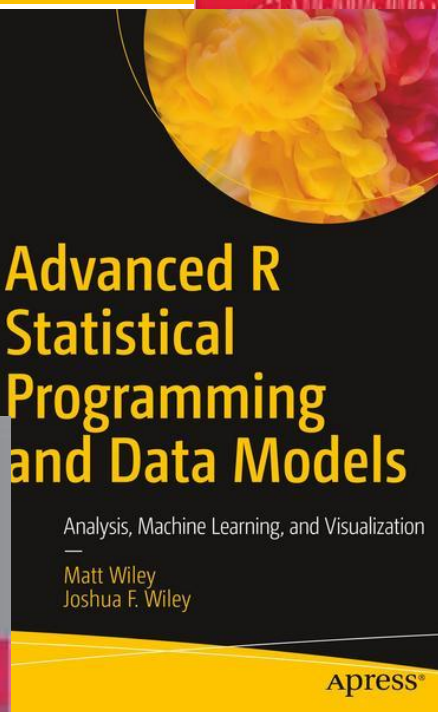
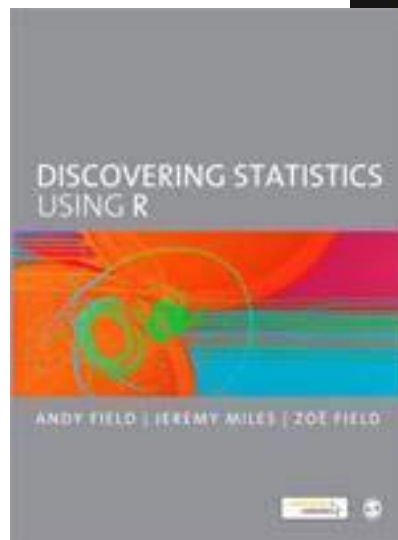
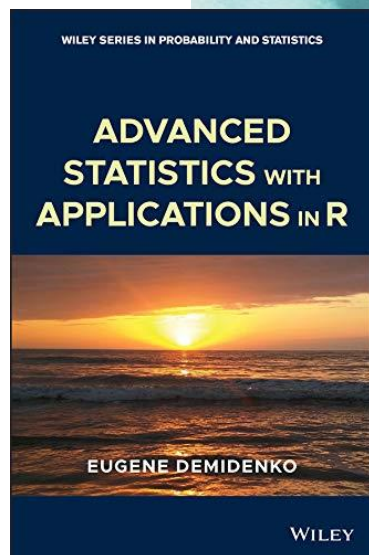
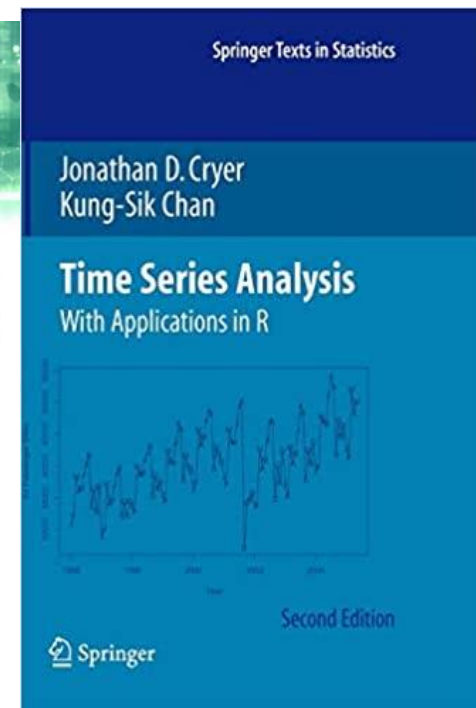
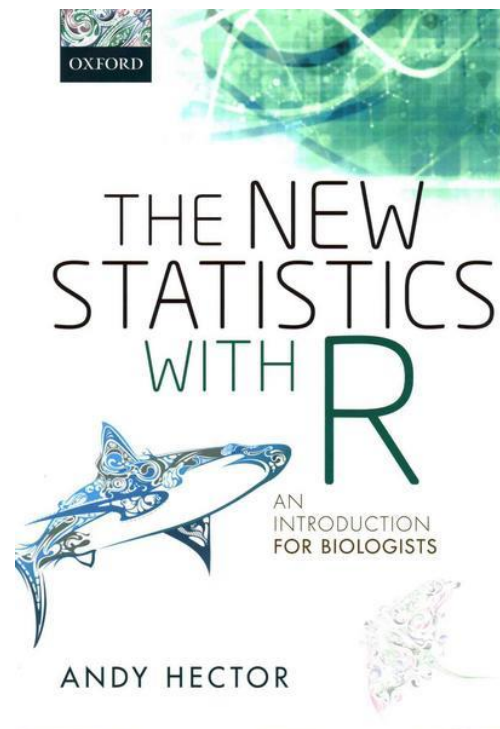
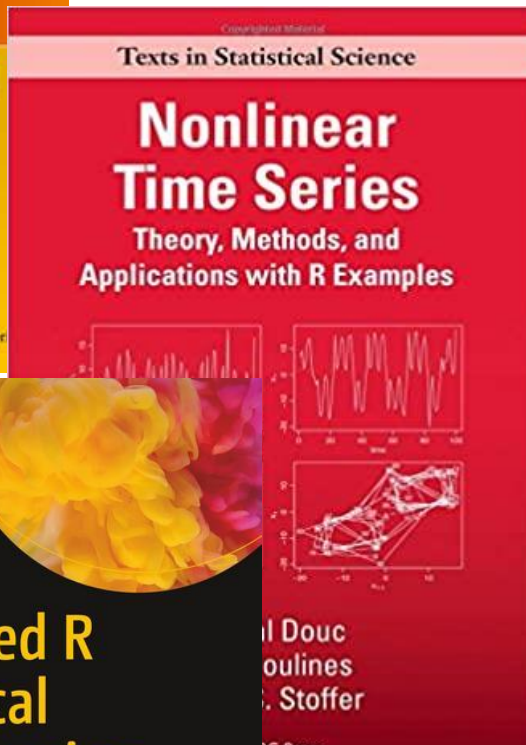
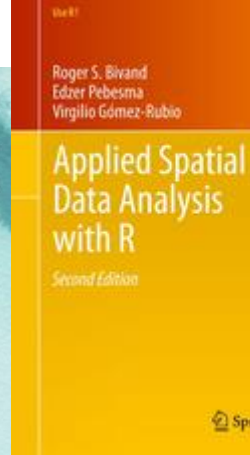
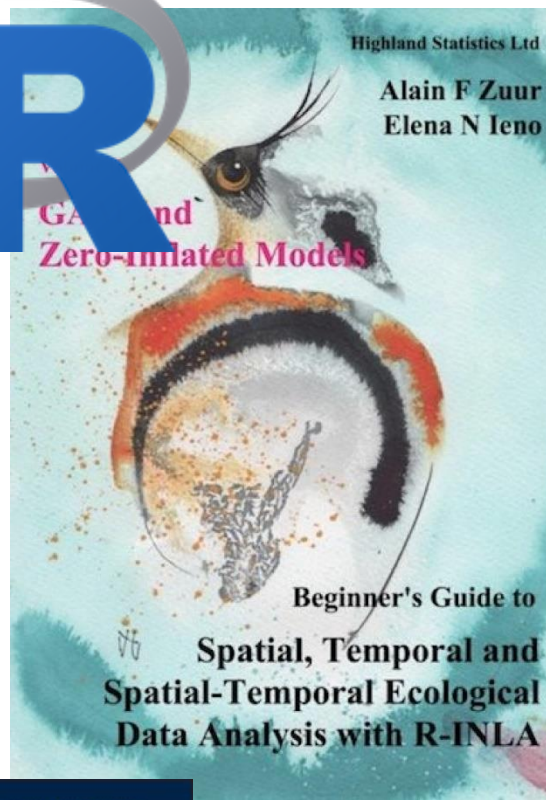


Basic statistics in R

Fundamentals in Ecology

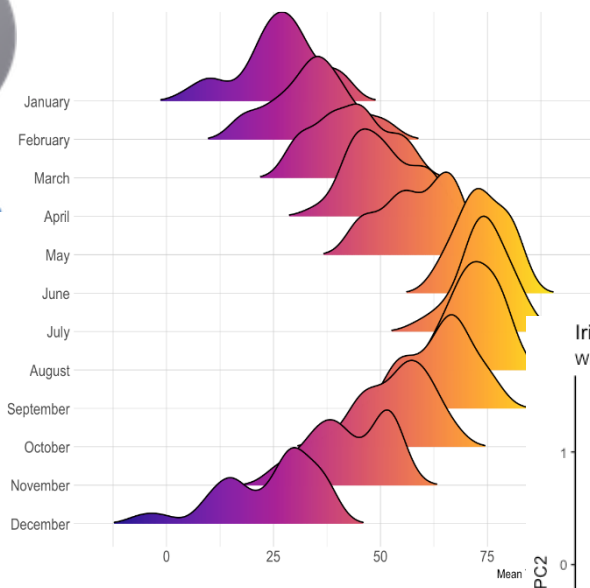
What is statistics?

- Mathematical science tool including methods of collecting, organizing and analyzing data in such a way that meaningful conclusions can be drawn from them.
- Descriptive statistics: processing of data without attempting to draw inferences (plots, tables)
- Inferential statistics uses mathematical tools to make forecasts and projections based on existing data.
 - Difference between statistical inference and biological inference!
- Hypothesis testing, experimental design



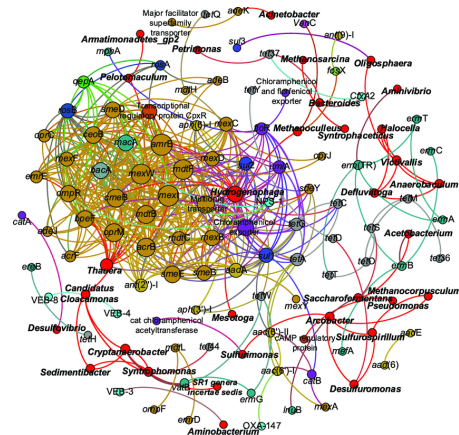
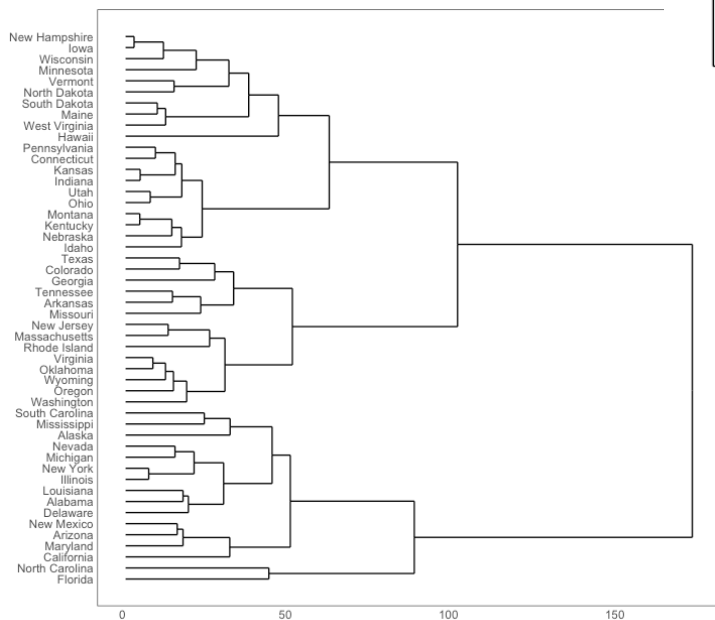
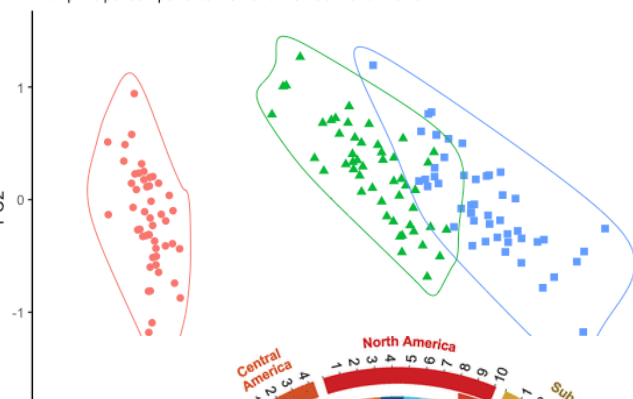


Temperatures in Lincoln NE in 2016

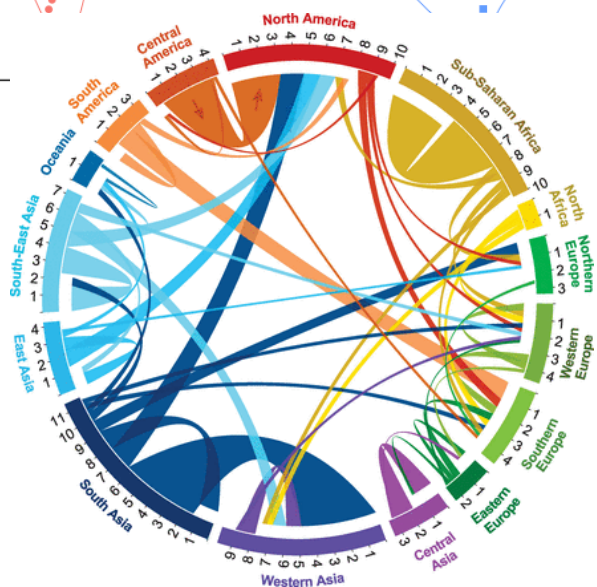


Iris Clustering

With principal components PC1 and PC2 as X and Y axis

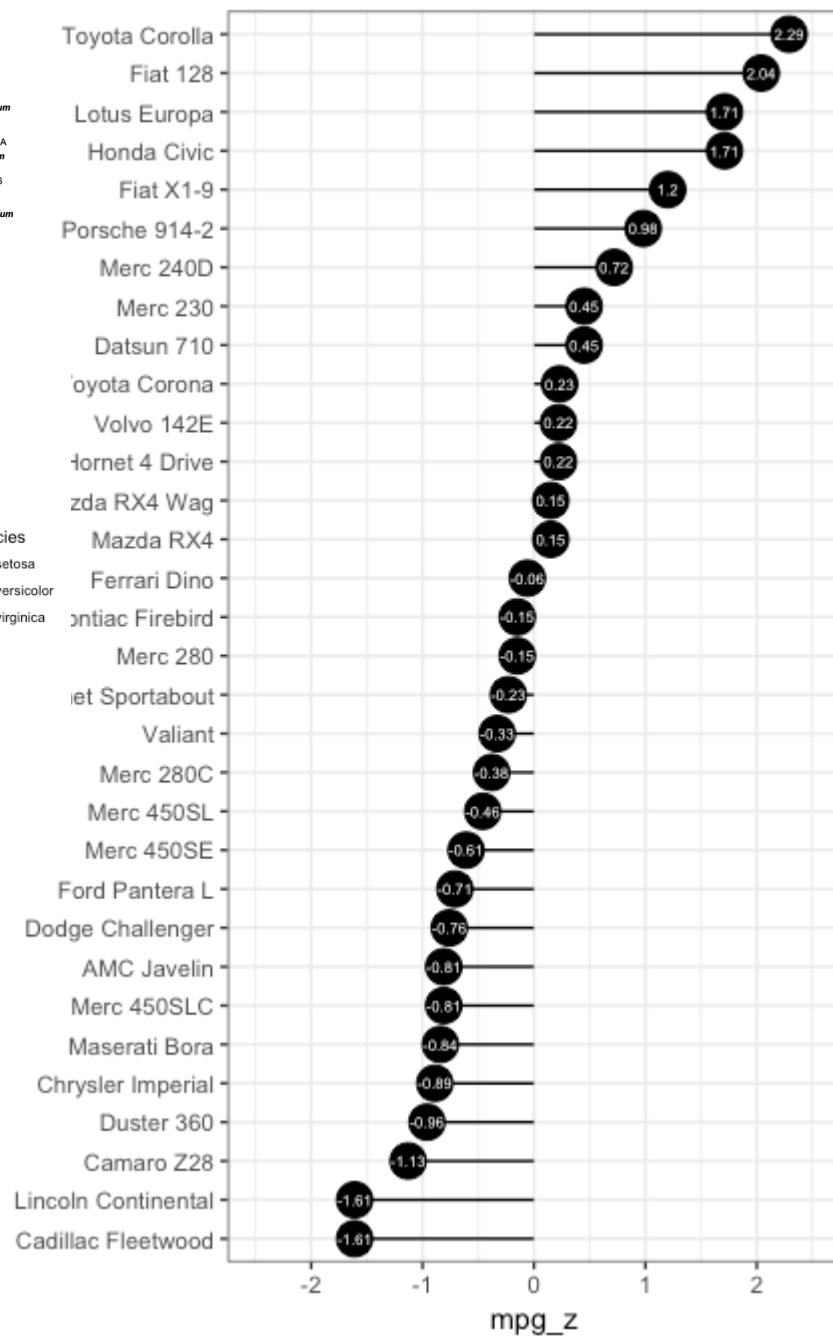


Species
- setosa
- versicolor
- virginica



Diverging Lollipop Chart

Normalized mileage from 'mtcars': Lollipop



First steps

- Descriptive statistics
- Correlation
- Comparison of groups (iris dataset)
 - 2 groups: t-test
 - more than 2 groups: ANOVA
- Linear models (regression, mtcars dataset)

Iris flower data set



Iris setosa



Iris versicolor



Iris virginica

