

Applied Multivariate Techniques

Monica Chiogna

PhD School, XXVIII cycle

Course Description

This course provides a quick overview of multivariate techniques. Topics include: dimension reduction, classification, clustering. The course will also try to touch some modern data analysis techniques, through the development of small projects.

Objectives

The objectives of this course are:

- to learn some of the traditional as well as the more recent tools for analysing multidimensional data;
- to learn some of the statistical inference tools for model selection and inference;
- to get hands-on experience in using some of these techniques, through the development of a small project.

Schedule

9	July	11.30-13.30	Introduction, course organization, etc.
16	September	11.00-13.00	Basic techniques
17	September	11.00-13.00	Basic techniques
18	September	11.00-13.00	Basic techniques
20	September	10.00-13.00	Project choice
20	October	15.00-16.00	Final report submission
8	November	15.00-17.00	Poster presentation and discussion

Recommended texts

- Härdle, W. Simar, L. (2007). *Applied Multivariate Statistical Analysis*, Springer.
- Hastie, T., Tibshirani, R., and Friedman, J. (2001). *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, Springer.
- Mardia, K.V., Kent, J.T., and Bibby, J.M. (1979). *Multivariate Analysis*, Academic Press.

Final Exam

November, 18 h.15.00