UCLouvain

lstat2400

2019

High-dimensional statistics: Theory and practice

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

3 credits	15.0 h	Q2

Teacher(s)	Pircalabelu Eugen ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	The course focuses on high-dimensional settings and on techniques to that allow parameter estimation for high-dimensional models in statistics.
Aims	1 A. Eu égard au référentiel AA du programme de master en statistique, orientation générale, cette activité contribue au développement et à l'acquisition des AA suivants, de manière prioritaire : 1.4, 1.5, 2.4, 4.3, 6.1, 6.2. B. By the end of this class, the student will be able to understand the basic concepts of penalized estimation and will be able to apply these concepts to perform estimation/inference for high-dimensional models in statistics. - - - - *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content	The course outline is as follows: 1. Introduction • Semiparametric models • Semiparametric Z-estimators 2. Empirical processes • Review of the basics of stochastic processes • Introduction to modern empirical process theory • Examples 3. Asymptotics for semiparametric Z-estimators
Bibliography	• 'Billingsley, P. (1968). Convergence of Probability Measures , Wiley, New York. • 'Newey, W.K. (1994). The asymptotic variance of semiparametric estimators. Econometrica, 62, 1349'1382. • 'Van der Vaart, A. and Wellner, J.A. (1996). Weak Convergence and Empirical Processes. Springer, New York.
Faculty or entity in charge	LSBA

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Certificat d'université : Statistique et sciences des données (15/30 crédits)	STAT2FC	3		
Master [120] in Statistic: General	STAT2M	3		
Master [120] in Data Science : Statistic	DATS2M	3		