UE6 DATA

Composante
Ecole d'économie de la Sorbonne (EES)

Période de l'année
Printemps

Liste des enseignements

Obligatoire00Matière18.0Summary: Through three applications, the course will provide an introduction to Big Data Analytics in finance. Each project (6 hours) will be divided into three sessions: A presentation of the problematic and a discussion about the tools and the methodology that could be used by students. A session during which students works in group on the project and ask questions (debugging). A presentation of the project to the class by the students. - The first project will consist of using Google Trends to create a novel indicator of sentiment/attention to financial news before using this indicator for asset pricing.- The second project will consist of analyzing interactions between users on Twitter to detect influential users talking about financial markets using network theory.- The third project will consist of using machine learning algorithms to classify messages posted on StockTwits as positive or negative.The language used for the course is Python. Professor: Thomas Renault (Assistant Professor - University Paris 1 Panthéon-Sorbonne)Student assessment: Project (submission + presentation)Matière18.0Summary: This course is an introduction to the concepts of network science applied to graphs of transactions extracted from a blockchain.It will cover theoretical aspects such as the characterization of networks at the micro, macro and meso levels, but also discuss the specific case of Bitcoin transaction network, how to build and explore it, and what insight previous research gave us about it.Students will learn tools and libraries to explore, process and visualize such networks. Professor: Rémy Cazabet (Professor of Computer Science - University of Lyon)Student assessment: Project in PythonMatière1.06.0Summary:- Economics of data.- Economics of free mobile applications.Professor: Thomas Renault (University Paris 1 Pantheon-Sorbonne)Student assessment: Presentation of a research paper on data privacy.Matière2.018.0Summary: The course is divided in two:- Copulas with applications to portfolio management; extensions with Bayesian networks to deal with high dimensional systems, notably to assess contagion of extreme risks.- Panel data econometrics applied on non-financial firms accounting data. (9h)Professors: Catherine Bruneau (Professor of Economics - University Paris 1 Panthéon-Sorbonne), Jean-Bernard Chatelain (Professor of Economics - University Paris 1 Panthéon-Sorbonne)Student assessment: 2 projects (Python / R) + Short examMatière2.018.0Summary: This course will bring students quantitative skills to be deployed at Fintechs, traditional financial entities and/or regulators. Objective: Reviewing recent advances in econometric theory and economic modelling. Application of those concepts in Python and/or R. Students will be asked to gather financial data from traditional as well as alternative sources. Students will be invited to develop advanced models to propose economic narratives and to exploit results in order to suggest choices to policy makers or investment professionals. Professor: Eric Vansteenberghe (Economist and Researcher - Banque de France)Student assessment: Exam + Quantitative project (in R)