

Master Finance

Optimization methods in finance

Responsable	Descriptions	Informations
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LANGUE(S) D'ENSEIGNEMENT

Anglais

CONTENU

1) Goals: The course aims at introducing the students to the practice of optimizing their use of the available data for financial decision making. The decision is the solution to an optimization problem with parameters that are data-driven. Examples includes optimal portfolio allocation, estimation of time-varying volatility and calibration of trading rules. The input data is noisy and optimization is needed to extract the relevant signal for financial decision making. The course requires students to get their hands dirty in the R software environment with the ideas.

2) Course outline:

1. General introduction to optimization of a non-linear function (LP, QP, quasi-newton, heuristics)
2. Introduction to data analysis and numeric optimization in R
3. Modelling financial returns and optimization to obtain maximum likelihood estimates of GARCH models.
4. Optimization of financial portfolios.
5. Problem of estimation error (garbage in, garbage out)
6. Optimization of a trading rule.

COMPÉTENCES À ACQUÉRIR

1. Skill to translate a financial decision into an optimization problem
2. Skill to do numeric optimization in R and interpret results
3. Skill to analyse data in R
4. Skill to work in groups and deliver professional reports.

MODALITÉS D'ORGANISATION

The course objectives are achieved through learning by doing. The classes take place in the computer lab and online on Datacamp.

BIBLIOGRAPHIE, LECTURES RECOMMANDÉES

Slides and R scripts.

VOLUME HORAIRE

- Volume total: 18 heures
- Cours magistraux: 18 heures

CODES APOGÉE

- BFIC11B [ELP]

M3C

Aucune donnée M3C trouvée

POUR PLUS D'INFORMATIONS

[Aller sur le site de l'offre de formation...](#)



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