

Algorithms for continuous optimization

ECTS : 3

Volume horaire : 15

Description du contenu de l'enseignement :

This course provides a comprehensive introduction to continuous optimization, with an emphasis on algorithmic methods and their practical implementation in engineering and computational settings. The course covers a broad range of topics in continuous optimization, presenting both the underlying mathematical problem formulations and the design and analysis of algorithms for their solution. Particular attention is devoted to the implementation of optimization algorithms in the Julia programming language. The course requires a solid level of mathematical maturity and assumes prior familiarity with multivariable calculus, linear algebra, and basic probability theory; these concepts will be reviewed as needed throughout the course.

Compétence à acquérir :

Derivatives and Gradient, Bracketing, Local Descent, First-Order Methods, Second-Order Methods, Direct Methods, Stochastic Methods.

Mode de contrôle des connaissances :

- Brief Written Examination
- Project-Based Assignment

Bibliographie, lectures recommandées :

Mykel J. Kochenderfer and Tim A. Wheeler. [Algorithms for Optimization](#). MIT Press, 2019.

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