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Machine learning and data mining (3IN2011)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en informatique	**Cours: 2 ph** **Exercice: 2 ph**	**écrit: 2 h**	5

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante:

Prof. Jacques Savoy

Objectifs:

The main objective of this course is to introduce the students to the various techniques and strategies that can be used to

- to discover pertinent relationships (or correlations) between variables
- to evaluate such relationships and machine learning approaches
- to know how to conduct a machine learning process based on available data and to interpret the results.

Practical exercises will complete the theoretical presentation.

Contenu:

Introduction to machine learning and data mining concepts, problems and applications; Simple rules generation; Bayesian learning; Decision trees; Associations rules, Methodology of evaluation, Nearest neighbors (and k-NN), Clustering; Web Mining (Page Rank, HITS and spam detection).

The final mark is based on both a final written exam and the results of the practical exercises.

References

- Ian H. Witten, Eibe Frank: Data Mining: Practical Machine Learning Tools and Techniques with Java Implementations. Morgan Kaufman.
- Tom Mitchell: Machine Learning. McGraw Hill.
- Christopher M. Bishop: Pattern Recognition and Machine Learning. Springer.
- Jiawei Han, Micheline Kamber: Data Mining: Concepts and Techniques. Springer.

Forme de l'évaluation:

Examination two hours

Documentation:

Copies of the slides available

Pré-requis:

None

Forme de l'enseignement:

2 hours of lectures and 2 hours of exercises

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