INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES LYON

DPT TELECOMMUNICATIONS SERVICES ET USAGES
INSA Campus LyonTech - Bâtiment Hedy Lamarr
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Informatique

Des bases de donnés à la fouille de données - Partie 2

IDENTIFICATION

CODE :	IST-4-DBM2
ECTS :	3.0

HORAIRES

Cours :	0.0 h
TD :	20.0 h
TP :	0.0 h
Projet :	0.0 h
Face à face pédagogique :	20.0 h
Travail personnel :	20.0 h
Total :	40.0 h

ÉVALUATION

- Small project (with 4 hours of assistance) on computers
- 2 hours of presentation of the project by the students

SUPPORTS PÉDAGOGIQUES

LANGUE D'ENSEIGNEMENT

Anglais

CONTACT

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OBJECTIFS RECHERCHÉS PAR CET ENSEIGNEMENT

This course introduces data mining as an extension of standard database querying approaches. We motivate the need for new querying mechanisms to support data analysis and Knowledge Discovery from Databases (KDD) by means of data mining techniques.
The classical data mining algorithms (clustering, classification, association rule mining) are introduced. We explain why it is interesting to study and implement such algorithms within the recent setting of constraint-based data mining. Finally, the design of data mining query languages is considered. To be concrete, the students will have to perform some practical data analysis tasks by means of the open source KNIME data mining tool. Beside the introduction of the most popular techniques, we will do our best to sketch research challenges in the area, including a discussion on the research results collected in Lyon during the last decade.

PROGRAMME

From data to knowledge: A database perspective to KDD
Introducing the most important data mining methods
Exploratory Data Analysis
Clustering
Pattern discovery
Supervized classification
Designing data mining query languages

BIBLIOGRAPHIE

[1] David Hand, Heikki Mannila, Padhraic Smyth. Principles of Data Mining. MIT Press, 2001, 546 pages. Chinese translation, China Machine Press, ISBN 7-111-11577-5, 2003.
[2]Pang-Ning Tan, Michael Steinbach, Vipin Kumar. Introduction to Data Mining. Addison-Wesley, 2006, 710 pages.
[3]Mohammed J. Zaki, Wagner Meira Jr., Fundamentals of Data Mining Algorithms, Cambridge Press. In Press (2011).

PRÉ-REQUIS

Basic database notions, SQL