LINGI2379
2014-2015

Machine learning seminar

3.0 credits	30.0 h	2q

Teacher(s) :	Deville Yves (compensates Dupont Pierre) ; Deville Yves (compensates Verleysen Michel) ; Verleysen Michel ; Dupont Pierre (coordinator) ;
Language :	Anglais
Place of the course	Louvain-la-Neuve
Inline resources:	> http://icampus.uclouvain.be/claroline/course/index.php?cid=lingi2379
Main themes :	Themes are chosen in the domain of machine learning
Aims :	Given the learning outcomes of the "Master in Computer Science and Engineering" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: -- INFO1.1-3 -- INFO3.1, INFO3.2 -- INFO5.3-6 -- INFO6.1, INFO6.3, INFO6.4 Given the learning outcomes of the "Master [120] in Computer Science" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: -- SINF1.M4 -- SINF3.1, SINF3.2 -- SINF5.3-6 -- SINF6.1, SINF6.3, SINF6.4 Students completing this course successfully will be able to -- study current issues in machine learning, pattern recognition or data analysis -- summarize a technical or scientific paper of the domain, convey it to colleagues, and discuss it with a critical viewpoint *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Evaluation methods :	The evaluation focuses on the quality of the presentations made ''by each student in front of to other participants in the seminar. The overall grade consists of: - 50% on the educational quality of the presentation - 50% on the accuracy of the scientific content of the presentation In the second session, the evaluation is 100% on a written report to the teacher the first day of the examination session.
Teaching methods :	The course is organised as a seminar where student meet regularly to present and discuss recent scientific papers. Les séminaires pourront être présentés en anglais ou en français par les étudiants.
Content :	Illustrative examples: -- Semi-supervised learning methods -- Structured data mining (graphs, trees, sequences, etc.) -- Kernel methods for classification and regression -- Variable selection methods -- Hidden Markov models and their applications -- Boosting and bagging algorithms

	-- Automata induction techniques
Bibliography :	Scientific articles in Machine Learning, supplemented by one or the other textbooks depending on the choice of students's topics. Examples: -- Statistics for High-Dimensional Data: Methods, Theory and Applications, Bühlmann and van Geer, Springer, 2011. -- Nonlinear Dimensionality Reduction, Lee and Verleysen, Springer, 2007. -- Computational Methods of Feture Selection, Liu and Motoda, Chapman & mp; Hall / CRC, 2008.
Other infos :	Background (having passed at least one of the following courses) : -- LINGI2262 Machine Learning -- LELEC2870 Artificial neural networks -- LSINF2275 Data mining and decision making
Cycle and year of study :	> Master [120] in Computer Science > Master [120] in Computer Science and Engineering
Faculty or entity in charge:	INFO