UNIVERSITÀ DI PAVIA

Anno Accademico 2019/2020

ARTIFICIAL INTELLIGENCE

Anno immatricolazione	2019/2020
Anno offerta	2019/2020
Normativa	DM270
SSD	ING-INF/05 (SISTEMI DI ELABORAZIONE DELLE INFORMAZIONI)
Dipartimento	DIPARTIMENTO DI FISICA
Corso di studio	SCIENZE FISICHE
Curriculum	Fisica delle tecnologie quantistiche
Anno di corso	1°
Periodo didattico	Primo Semestre (30/09/2019 - 17/01/2020)
Crediti	6
Ore	45 ore di attività frontale
Lingua insegnamento	English
Tipo esame	ORALE
Docente	PIASTRA MARCO (titolare) - 6 CFU
Prerequisiti	Basic mathematical skills, practical knowledge of at least one programming language.
Obiettivi formativi	The course follows a conceptual pathway along the fundamental principles of the discipline. It is divided into two parts: the first part is an introduction to classical formal logic, both propositional and first order, with a special focus to the aspects of automatic calculus, while the second part is an introduction to the basic principles of machine learning and self-organizing systems.
Programma e contenuti	Classical logic and automated symbolic reasoning Boolean algebras Logical language and semantical structures: logical consequence Deductive systems for propositional logic Decision problems and decidability

	Predicates and relations: first order logic Semi-decidability of first order logic First-order resolution with unification Machine Learning Logic and probability: representation or statistics? The language of probability: representation Bayesian inference Graphical models and automation Probabilistic learning Clustering: K-means and related methods Self-organizing systems and applications
Metodi didattici	Lectures (hours/year in lecture theatre): 45 Practical class (hours/year in lecture theatre): 0 Practicals / Workshops (hours/year in lecture theatre): 0
Testi di riferimento	See the home page of the course for lecture slides, suggested readings and software for the exercises
Modalità verifica apprendimento	The final exam is an interview about the theory, together with the discussion of practical activities in the lab.
Altre informazioni	The final exam is an interview about the theory, together with the discussion of practical activities in the lab.
Obiettivi Agenda 2030 per lo sviluppo sostenibile	$lbl_legenda_sviluppo_sostenibile