



ARTIFICIAL INTELLIGENCE	
Anno immatricolazione	2020/2021
Anno offerta	2020/2021
Normativa	DM270
SSD	ING-INF/05 (SISTEMI DI ELABORAZIONE DELLE INFORMAZIONI)
Dipartimento	DIPARTIMENTO DI MATEMATICA 'FELICE CASORATI'
Corso di studio	MATEMATICA
Curriculum	PERCORSO COMUNE
Anno di corso	1°
Periodo didattico	Primo Semestre (01/10/2020 - 20/01/2021)
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	1) Classical logic and automated symbolic reasoning Boolean algebras Logical language and semantical structures: logical consequence Deductive systems for propositional logic Decision problems and decidability

	<p>Predicates and relations: first order logic Semi-decidability of first order logic First-order resolution with unification</p> <p>2) Machine Learning</p> <p>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</p>
Metodi didattici	<p>Lectures (hours/year in lecture theatre): 45 Practical class (hours/year in lecture theatre): 0 Practicals / Workshops (hours/year in lecture theatre): 0</p>
Testi di riferimento	<p>See the home page of the course (http://vision.unipv.it/AI) for lecture slides, suggested readings and software for the exercises</p>
Modalità verifica apprendimento	<p>The final exam is an interview about the theory, together with the discussion of practical activities in the lab.</p>
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Obiettivi Agenda 2030 per lo sviluppo sostenibile	<p>\$Ibl legenda sviluppo sostenibile</p>