ARTIFICIAL INTELLIGENCE

Degree in Computer Systems

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Code: 10105

Main Scientific Area: Science and Technology Program

Lecturer: Joaquim José de Almeida Soares Gonçalves

Language of Instruction: Portuguese

Regime: S1

Contact Hours: 60h Total Workload: 100h

ECTS: 6,0

Objectives

For thousands of years, the man have tried to understand how he thinks, or in other words, how he perceives, understands, predict, and manipulate a world far larger and more complicated than itself. The field of artificial intelligence, or AI for short, goes further still: it attempts not just to understand but also to build intelligent entities.

This curricular unit aims to provide a broad technical introduction and a review of the main concepts of artificial intelligence. It aims to equip students with basic skills in abstract thinking and solving complex theoretical problems.

Learning Outcomes

Students who successfully complete this course unit should be able to:

Understand and program agents (environment in which they operate reactions to this);

Ability to represent and implement various types of knowledge, as well as to use search concepts in:

areas of informed, uninformed and local search
constraint satisfaction problems
Bayes Networks
Learning Techniques

Course Contents

Introduction to Artificial Intelligence

Smart Agents

Decision Making

Informed search
Uninformed search
Constraint Satisfaction Problems
Bayes Networks

Learning

Recommended Bibliography

Russell and P. Norvig, Artificial Intelligence: A Modern Approach, Third Edition, Prentice Hall 2009, ISBN: 0-13-604259-7.

Learning and Teaching Methods

The main topics (intelligent agents, decision-making and learning) are intended to equip students with the knowledge essential for the development of intelligent agents capable of operating and adapting to an environment with some degree of complexity.

Assessment Methods

Theoretical component:

4 written tests (T1-T4)

Evaluable in appeal and special seasons

Practical component:

practical work (TP)

Not evaluable in appeal and special seasons

The final classification of the students is obtained by the following formula:

CF = 20% x T1 + 20% x T2 + 20% x T3 + 20% x T4 + 20% x TP