

# ARTIFICIAL INTELLIGENCE

Scalab

Grupo de Inteligencia Artificial (Scalab)  
Departamento de Informática  
Escuela Politécnica Superior  
Universidad Carlos III de Madrid



# General information

- Coordinator:
  - José Manuel Molina (molina@ia.uc3m.es)
- Teachers:
  - Theory: Daniel Borrajo (2.1B09, x9459, dborrajo@ia.uc3m.es)
  - Practices: Lara Quijano (laraquij@inst.uc3m.es) 89, Yolanda Escudero 88
- Web: Aula Global 2
- Office hours
  - In Aula Global 2
  - Send an email

# Goals of the course

- Understand basic AI techniques
- Use those techniques in real tasks
- Analyze which one is best for each task

# Contents

- 1 Introduction to Artificial Intelligence
- 2 Production systems
- 3 Uninformed search
- 4 Heuristic Search
- 5 Probabilistic and Bayesian reasoning
- 6 Bayesian networks
- 7 Markov models
- 8 Fuzzy logic
- 9 Machine learning
- 10 Biologically-inspired techniques
- 11 Natural language
- 12 Robotics

# Relations with other courses

- Programming (1<sup>st</sup> year)
- Statistics (2<sup>nd</sup> year)
- Heuristics and Optimization (3<sup>rd</sup> year)
- Computation
  - Neural networks (3<sup>rd</sup> year)
  - Genetic and evolutive algorithms (3<sup>rd</sup> year)
  - Knowledge Engineering (4<sup>th</sup> year)
  - Machine Learning (4<sup>th</sup> year)
  - Data Analysis (4<sup>th</sup> year)
  - AI in entertainment (4<sup>th</sup> year)
  - AI in organizations (4<sup>th</sup> year)

# Evaluation

- Theory (40%): final exam
- Homeworks (60%):
  - one/two exams (30% from the total)
  - final homework (30% from the total)
- No continuous evaluation activities beyond the final exam
- Extra-exam:  
 $\max(\text{extra-exam}, 0.4 \times \text{extra-exam} + 0.6 \times \text{homeworks})$

# References



Nils Nilsson

*Artificial Intelligence. A new synthesis.*

McGraw-Hill, 1998.



Elaine Rich and Kevin Knight

*Artificial Intelligence.*

McGraw-Hill, Inc., 1991.

Second edition



Stuart Russell & Peter Norvig

*Artificial Intelligence: A Modern Approach*

Prentice Hall, 1995