Course Highlights

Machine Learning is the study of how to build computer systems that learn from experience. It is a subfield of Artificial Intelligence and intersects with cognitive science, information theory, and probability theory, among others. The course will explain how to build systems that learn and adapt using real-world applications from industry and science (e.g., learning to classify astronomical objects, to predict medical diagnoses, to play chess).

Topics

- Concept learning
- Hypothesis spaces
- Decision trees
- Neural networks
- Bayesian learning
- Computational learning theory
- Instance-based learning
- Genetic algorithms
- Rule-based learning
- Analytical learning
- Reinforcement learning

Labwork

- two midterm exams,
- a final exam,
- homework assignments
- A final project that involves some amount of programming

About the Instructor

Dr Ricardo Vilalta is assistant professor in the department of computer science at the University of Houston. He holds a MS and Ph.D. degrees in computer science from the University of Illinois at Urbana-Champaign. His research interests are in machine learning, pattern classification, artificial intelligence, and statistical learning.

And student(s) say...

"This course is the only course, which explains all the algorithms necessary to work in the areas of data mining, bioinformatics, artificial intelligence and, of course, machine learning. So if anybody wants to do a specialization in these areas this course is a must."

Murali Krishna, UH Computer Science

Reference Material


Related Courses

- Pattern Classification
- Artificial Intelligence

For more information, visit: www.cs.uh.edu/~vilalta