Introduction to Artificial Intelligence

Master on Internet of Things & Data Analitics

Tuesdays and Wednesdays

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What is Artificial Intelligence?

- There is no agreement on a universal definition

- "Set of algorithms, mostly HEURISTIC, focused on: *Reasoning, knowledge representation, planning, learning, natural language processing, and perception*"

- Heuristic: Practical method with no guarantees but it is good enough most of the times for the user

- Bio-inspired algorithms: They *mimic* human intelligence (whatever that means)

Objectives of this course

- Introduce you to AI techniques from a practical point of view.

- Still, some mathematical knowledge is required.

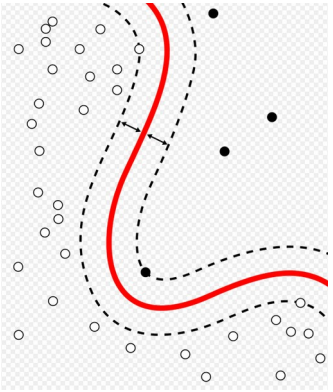
- Basics on algebra, calculus, and statistics.

Machine learning

- ML is the study of computer algorithms that can improve automatically through the experience and by the use of data.

- Examples: Email filtering, Speech recognition, Computer vision.

- Supervised learning: The set of data contains both, the inputs and the desired outputs (support-vector machines, neural networks)

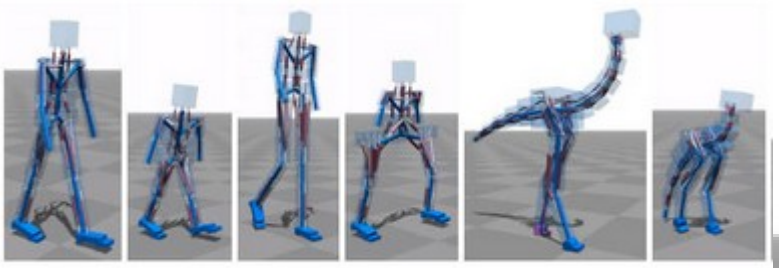


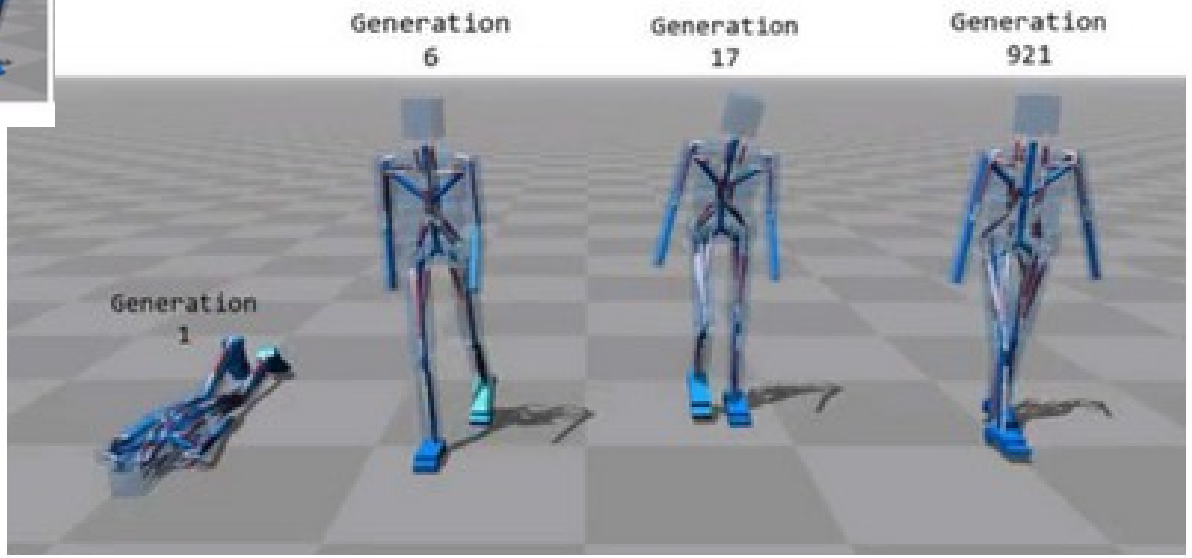
Machine learning

- Unsupervised learning: Algorithms that find patterns from untagged data. (deep learning can be unsupervised).

Genetic algorithms

- Good at generating a broad class of solutions to a problem.





Evaluation

- Series of short quizzes on the topics

- Final project in groups (last 4 sessions) with the learned techniques