Artificial Intelligence: An introduction

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Información del profesor

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- Contenido del curso: `https://gitlab.com/bivl2ab/academico/cursos-uis/ai/ai-uis-student`

Course outline

- **The course** is mainly based on the **coding of I.A concepts** and the **development of small applications**
- **The course** is focused on the analysis and study of **I.A algorithms**

I.A. Course

Course

It is about learning the fundamental tools to face problems and challenges of I.A. as well as some computational tools and theoretical concepts.

First module: Python and statistics introduction

- Introduction to Python
- Introduction to statistics
- Introduction to Visualization and data analytics

Second Module: Machine Learning

Clasification and regression

- Naive Bayes
- Classification trees
- Support Vector Machines
- Introduction to Deep-learning

Non-supervised learning

- K-means
- DBScan

Third module: Planning and Searching

- Planning and searching
- Genetic algorithms (GA)
- Simulated annealing (SA)

Structure of the Course

- 40% Talleres (Problemsets)
- 30% Parciales (Quizes)
- 30% Proyecto funcional IA
  - Solo se evalua el curso, si ha sido previamente aprobado antes del primer corte.

Curso en GITLAB:
`https://gitlab.com/bivl2ab/academico/cursos-uis/ai/ai-uis-student`

PREVIOUS PROJECTS

- https://gitlab.com/bivl2ab/academico/cursos-uis/ai/ai-uis-student/-/blob/master/projects/Proyectos_2018-2.md
- https://gitlab.com/bivl2ab/academico/cursos-uis/ai/ai-uis-student/-/blob/master/projects/Proyectos_2019-1.md
- https://gitlab.com/bivl2ab/academico/cursos-uis/ai/ai-uis-student/-/blob/master/projects/Proyectos_2019-2.md
  https://gitlab.com/bivl2ab/academico/cursos-uis/ai/ai-uis-student/-/blob/master/projects/Proyectos_2020-1.md

Some I.A. Applications: In classrooms

Some I.A. Applications: In Agriculture

Salient Gait maps

Learning convolutional neuronal patterns

A 3D convolutional gait representation that produces salient spatio-temporal regions can potentially support and complement the diagnosis and the following of Parkinson's disease

Big challenges: How understand complex concepts?

Now, the machines can dream

Big challenges

Big challenges

Video 02

ImageNet Challenge

IMAGENET

IMAGENET Netflix 22:30, Bill Nye

- 1,000 object classes (categories).
- Images:
  - 1.2 M train
  - 100k test.

As support for decisions making

- Medicine
- Politics
- Laws

NOVA Rise of the Robots

y ahora ...Atlas. Google again!

DARPA

Powered by Diesel
03
RedBull
MDV
MOHR DAVIDOW VENTURES
ANDROID
Drivers not required.
RedBull
MDV
Electronics Research Laboratory

Homework videos

Understanding Artificial Intelligence and Its Future

Thank you for your attention . . .

. . . It's time to wake up

Universidad Industrial de Santander

MACV
Motion Analysis and Computer Vision

BIVL²ab
Biomedical Imaging, Vision and Learning Laboratory