



# Intro to Artificial Intelligence

## Boardgame IA Design

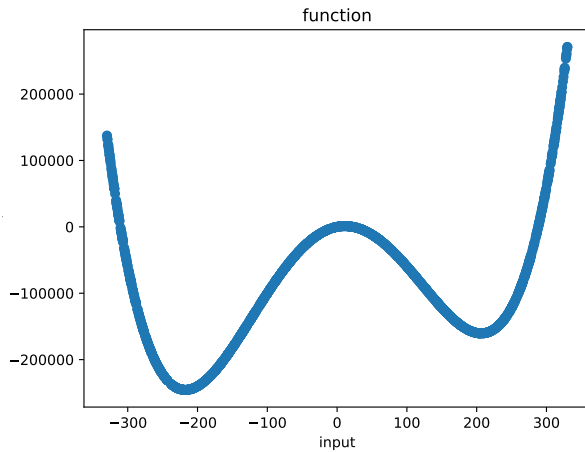
### B9 - Artificial Intelligence Introduction

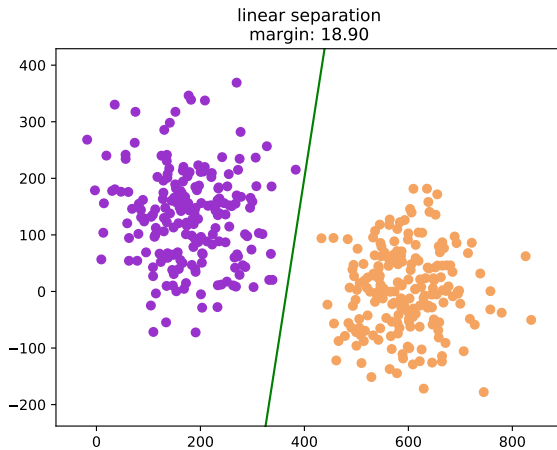
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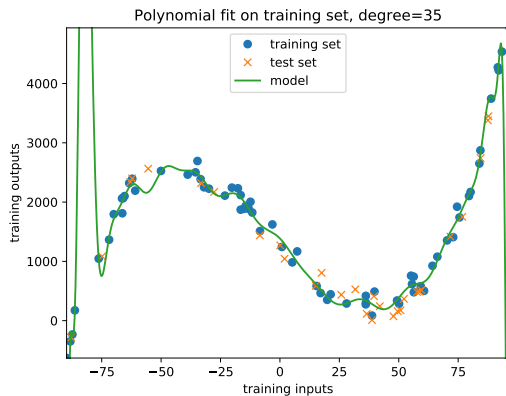
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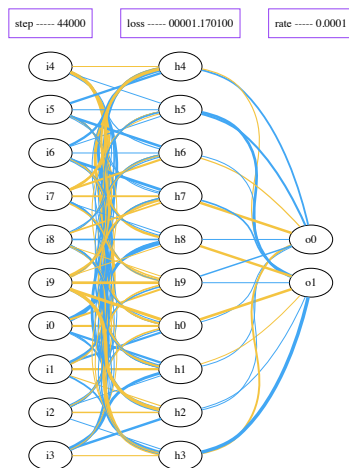


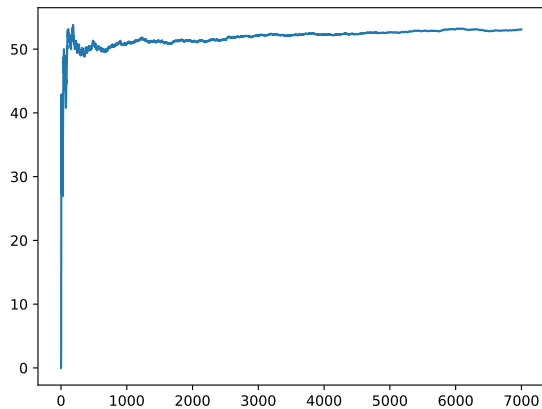
Figure: MNIST database [LeCun and Cortes, 2010]

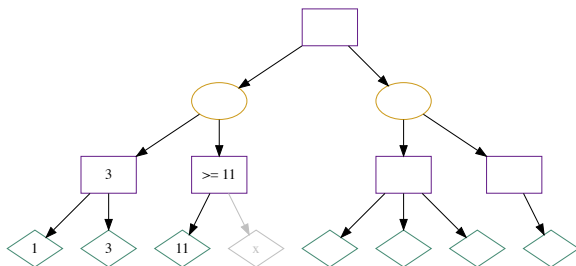














# Overview of the module

The module will contain two aspects :

- ▶ Theoretical: Presentations and exercises
- ▶ Project : Building a game AI

- ▶ **Thursday:**

- ▶ General presentation on AI and its paradigms, with exercises

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- Activities and exercises on AI topics :

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  - Neural networks

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- Activities and exercises on AI topics :
  - Neural networks
  - Monte Carlo Methods

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- Presentation of the project, of the game, of the server, start of the project

► **Friday:**

- Activities and exercises on AI topics :
  - Neural networks, application to MNIST
  - Monte Carlo Methods
  - Game theory and A/B decision trees
  - (maybe) Reinforcement Learning
- Continuation of the project

## Third party libs

We will work with python, python3.6 is preferred.

- ▶ **Thursday:**

- ▶ numpy
- ▶ matplotlib

- ▶ **Friday;**

- ▶ graphviz
- ▶ pygraphviz

- ▶ Optionnal : ipdb (debugger)



# Ressources

- ▶ **github of the module** : contains presentations and exercises.  
<https://github.com/nlehir/Intro-AI>
- ▶ **github of the game** : : contains the server and example clients. They communicate with sockets.  
[https://github.com/nlehir/phantom\\_opera](https://github.com/nlehir/phantom_opera)
- ▶ **former github of the game (text file version)** : contains the server and examples, clients communicate with the server with text files.  
[https://github.com/groznyniko/ia\\_fopera](https://github.com/groznyniko/ia_fopera)

# Contact

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# References I



LeCun, Y. and Cortes, C. (2010).  
{MNIST} handwritten digit database.