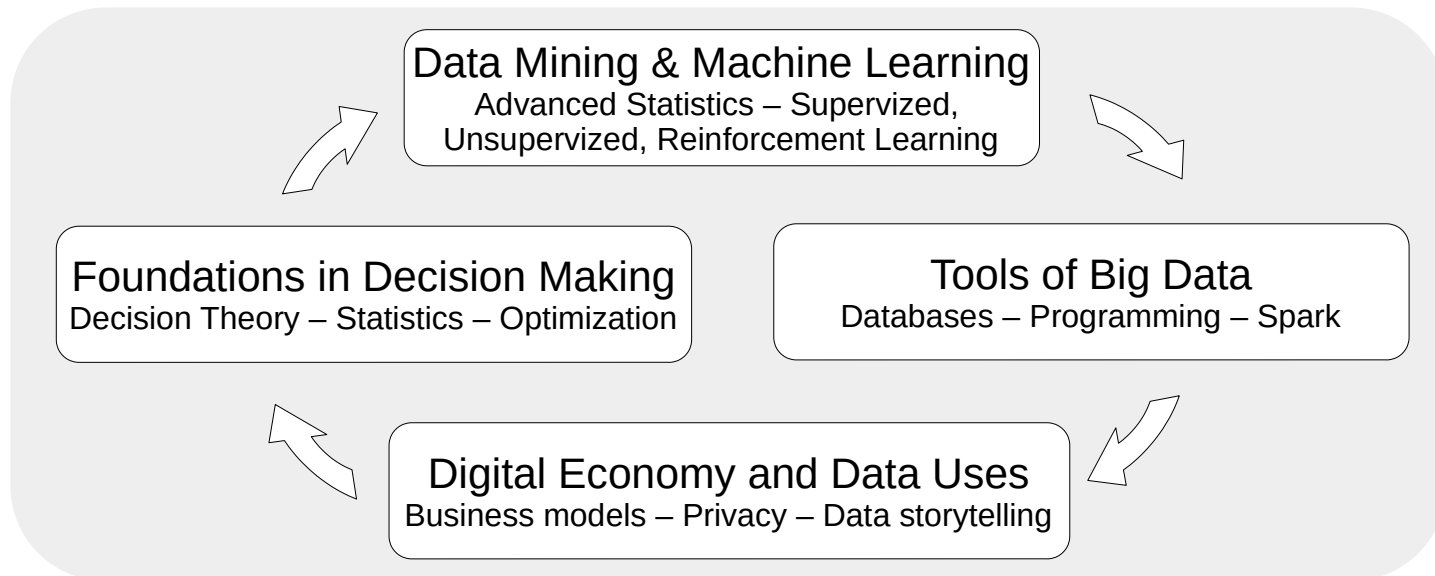
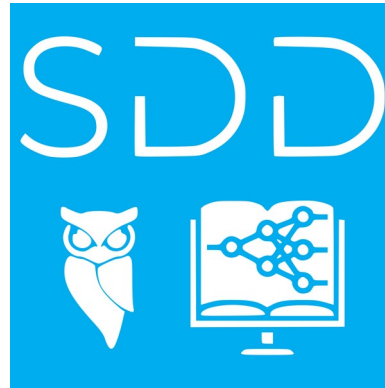


# Sciences de la Décision et Données



# Cours en SDD

## Faire

Acquérir,  
Stocker,  
Accéder

Analyser  
Explorer,  
Automatiser

Décider,  
Optimiser,  
Planifier

Critiquer,  
Valoriser

## Savoir

BDD,  
Archi de calcul,  
Aisance logicielle

Machine Learning,  
Data Mining,  
Stat,  
IA

Optimisation,  
IA,  
Planification

Business models,  
Privacy,  
Dataviz,  
Rencontres

## Cours

(301) T. commun

(311) AML

(312) OBD

(313) ENUD

(314) Hackathon

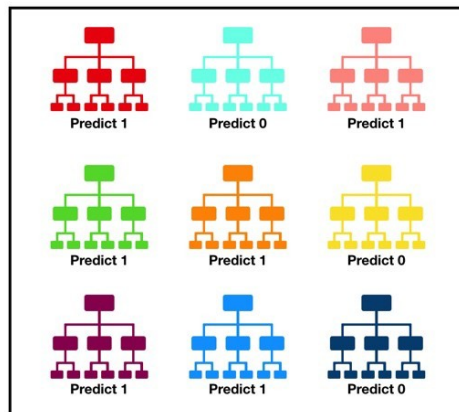
(319) Séminaires

# Planning

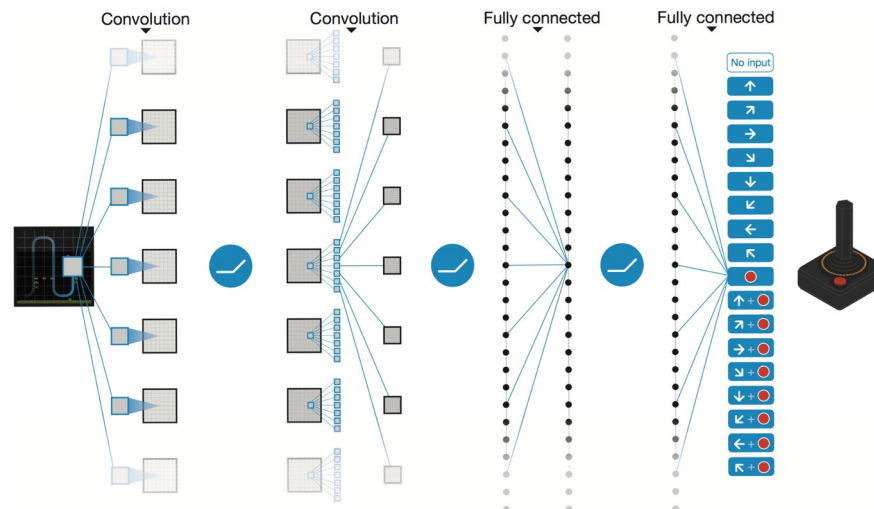
	september	october	november	december	january	february	march
Statistique	12 8 2						
Optimisation dans les graphes	3 2 5						
Optimisation Combinatoire		3 7					
Optimisation stochastique			7 3 3				
Théorie de la Décision				10			
Modules Parcours							6 9
AML-lin	8	7					
AML-ML	3	3 9 3 3	5				
AML-DL			6 6 9	6	3		
AML-RL					6 6 3 3		
OBD-data computation					6 10	2	
OBD-distribution					3	7	6
OBD-databases	10	3					
ENUD-business					10		
ENUD-privacy		6	3				
Hackathon						20	
Systems	14						

## Algorithms in Machine Learning

- What are the algorithms for the analysis and modeling of information and decisions?
- How do they work, fundamentally and theoretically?
- How can we use them practically?
- Linear models, machine learning, deep learning, reinforcement learning
- 80 hours, September - January
- <https://github.com/erachelson/MLclass>
- <https://github.com/erachelson/RLclass>
- Evaluation through Jupyter notebook creation, peer and expert evaluation



Tally: Six 1s and Three 0s  
**Prediction: 1**



Emmanuel Rachelson

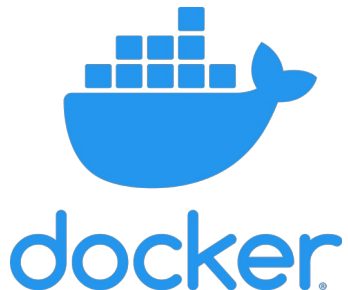


## Outils du Big Data / Tools for Big Data

- How is information represented, stored, and connected?
  - What are different compute methods, and how do they relate to data type?
  - How can we interact with data, in different formats and at scale?
  - Data computation, data distribution, databases
- 
- 50 hours, October and January/February
  - Evaluation on two projects, PostgreSQL and Dask, and quiz on cloud computing



Google Cloud Platform



## Economie Numérique et Utilisation des Données / Digital Economy and Data Use

- How are data and algorithms used in practice in the private and public sectors?
- What are the business models of data and AI?
- What are the technical, legal, and ethical issues surrounding data and algorithms?
- 19 hours, 9 in October/November, 10 in January
- Evaluation in mock trial of cases focusing on data, in-depth evaluation

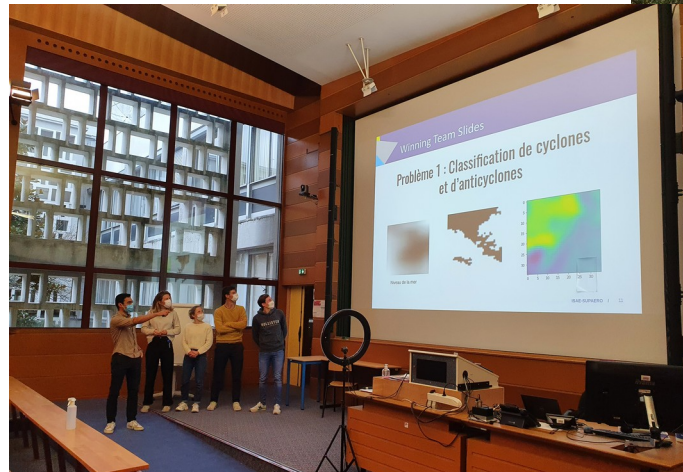
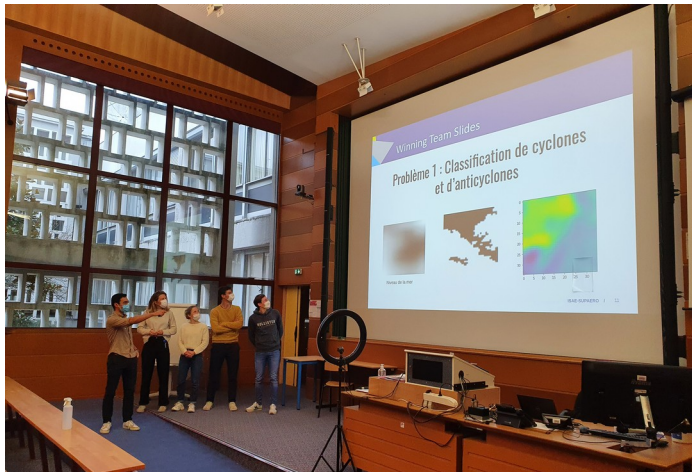




# FSD 314 - Hackathon

Practical application of SDD skills in teams of 3-5, working with industry partners

- 20 hours, Feb 27 – March 1
- <https://supaerodatascience.github.io/hackathon.html>
- Evaluation based on project



**AIRFRANCE**



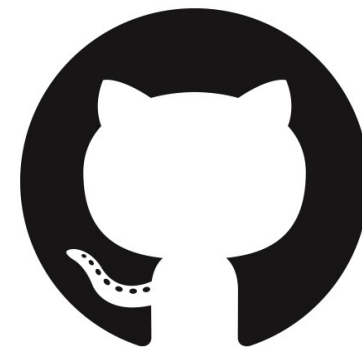
**AIRBUS**  
DEFENCE & SPACE



# FSD 319 - Seminaires

Classes and meetings which complete the SDD experience

- Systems and Python, 10 hours in September
- Invited lectures on AI throughout the year
- No evaluation: optional but highly recommended
- Cafés SDD
  - 1 hour discussions with industry and research experts
  - Whenever you want!
  - Discuss data scientist career, AI topics, anything
  - Coordinated with delegates





# Tools for SDD

Class materials: <https://supaerodatascience.github.io/>



Tools of Big Data

Search



SupaeroDataScience/OBD  
8 Stars · 12 Forks

## Tools of Big Data

[Overview](#)

### Data Computation

Introduction

Presentation

Cloud Computing >

Containers, Docker >

Orchestration, Deployment, Kubernetes >

## Tools of Big Data

The amount of data in the world, the form these data take, and the ways to interact with data have all increased exponentially in recent years. The extraction of useful knowledge from data has long been one of the grand challenges of computer science, and the dawn of "big data" has transformed the landscape of data storage, manipulation, and analysis. In this module, we will look at the tools used to store and interact with data.

The objective of this class is that students gain:



## Table of contents

Class structure

Data computation

Data distribution

Databases

Class schedule

## Tools:

- Linux/OS X natively or Windows Subsystem for Linux
- Git, ssh, python, Jupyter
- <https://www.linkedin.com/groups/12006478/>