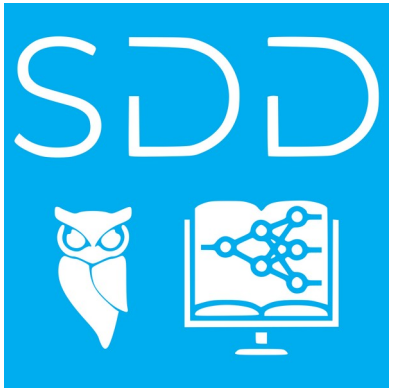
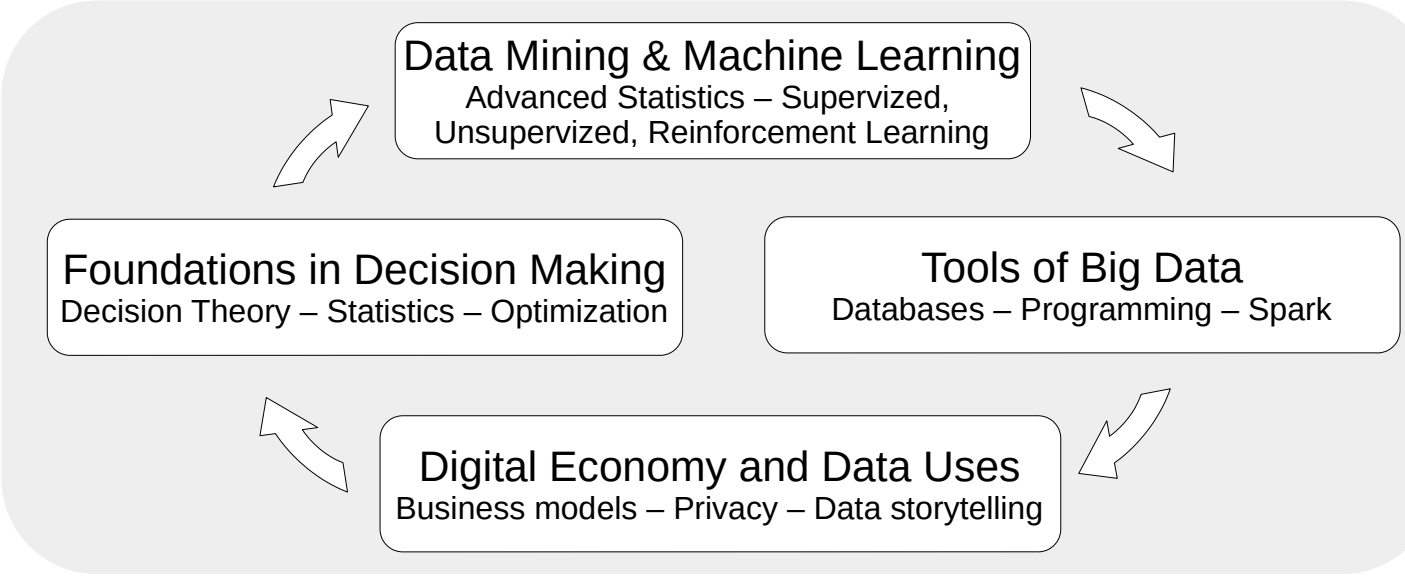
Sciences de la Décision et Donnes





Cours en SDD

Faire	Savoir	Cours
Acquérir, Stocker, Accéder	BDD, Archi de calcul, Aisance logicielle	(301) T. commun
Analyser Explorer, Automatiser	Machine Learning, Data Mining, Stat, IA	(311) AML
Décider, Optimiser, Planifier	Optimisation, IA, Planification	(312) OBD
Critiquer, Valoriser	Business models, Privacy, Dataviz, Rencontres	(313) ENUD
		(314) Hackathon
		(319) Séminaires

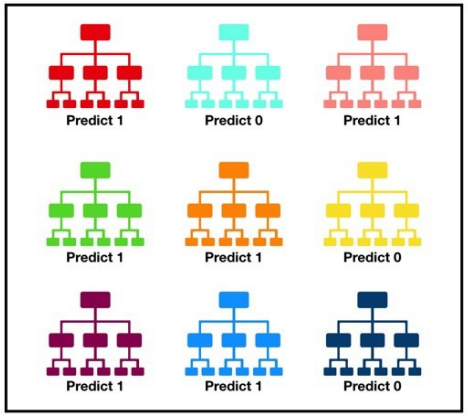
Planning

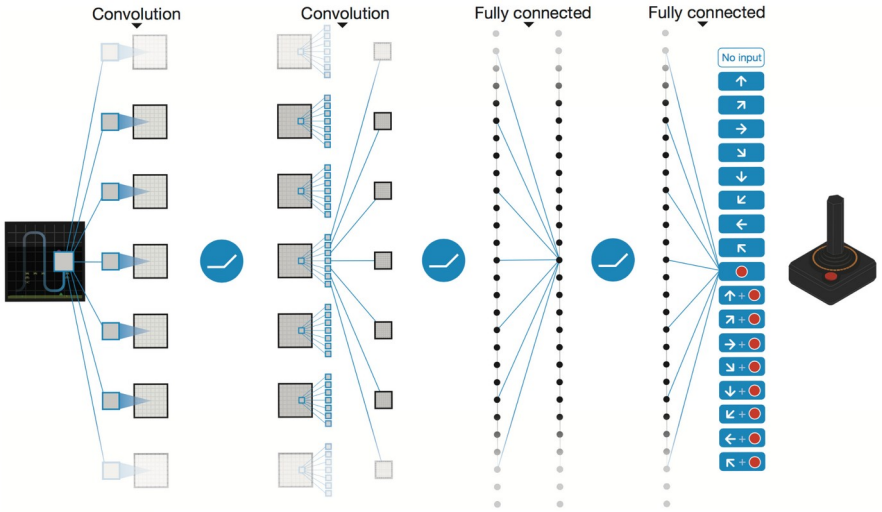
	september				october				november				december				january				february				march			
Statistique	12	8		2																								
Optimisation dans les graphes	3	2	5																									
Optimisation Combinatoire							3	7																				
Optimisation stochastique									7		3	3																
Théorie 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



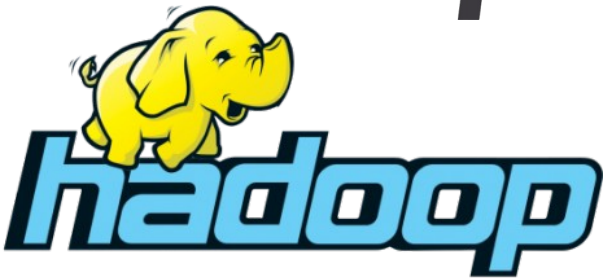


Emmanuel Rachelson

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



FSD 313 - ENUD

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

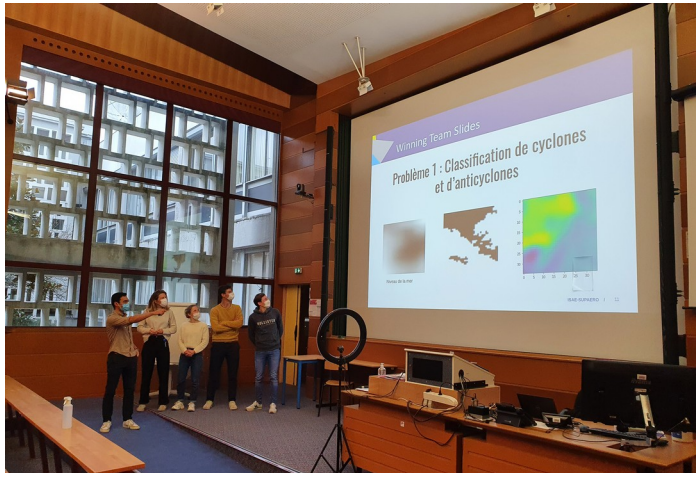
- How are data and algorithms used in practice in the private and public sectors?
- What are the business models of data and AI?
- What are the technical, legal, and ethical issues surrounding data and algorithms?

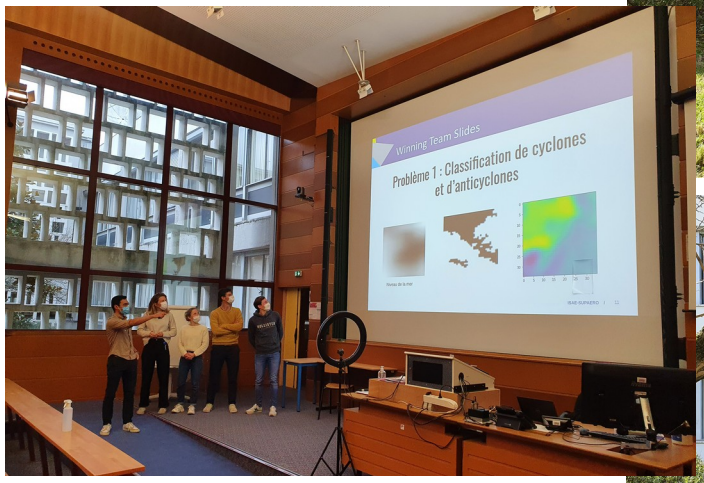
- 19 hours, 9 in October/November, 10 in January
- Evaluation in mock trial of cases focusing on data, in-depth evaluation

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

IRT SAINT EXUPÉRY

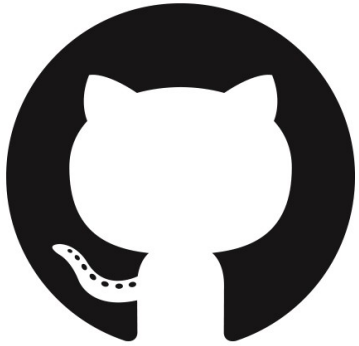
FSD 319 - Seminaires

Classes and meetings which complete the SDD experience

- Systems and Python, 10 hours in September
- Invited lectures on AI throughout the year

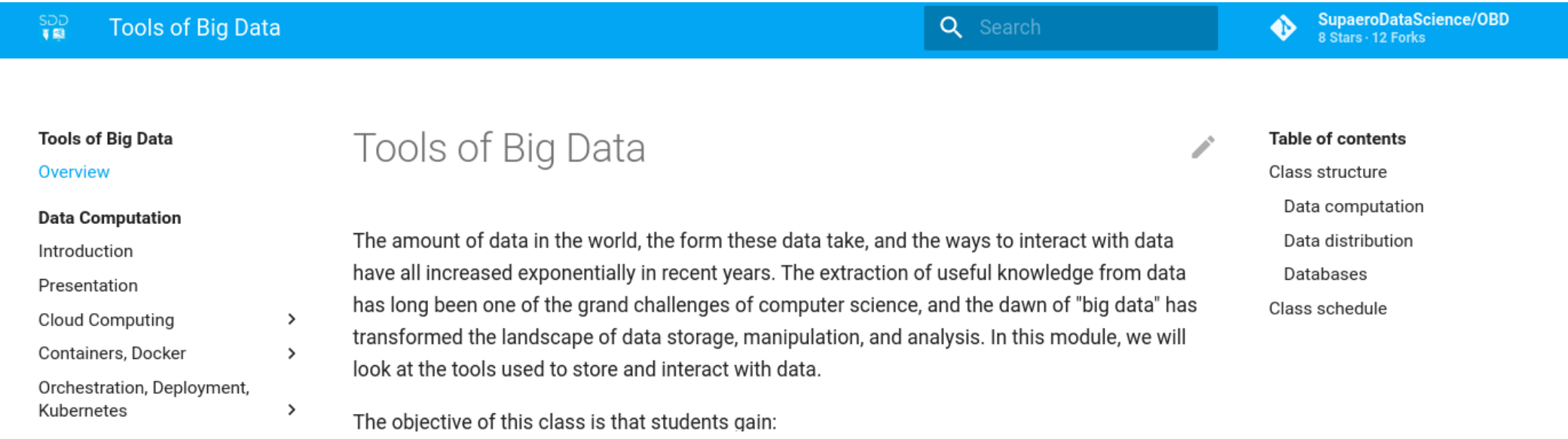
- No evaluation: optional but highly recommended

- 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:

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