

Inria

<Class'Code>



MINISTÈRE
DE L'ÉDUCATION
NATIONALE ET
DE LA JEUNESSE

Understanding Intelligently Artificial Intelligence :

a citizens' open formation.

Frédéric Alexandre, Robert de Barretin, Jade Becker, Marie-Hélène Comte, Martine Courbin, Sonia Cruchon, Aurélie Lagarrigue, Bastien Masse, Sophie de Quatrebarbes, Julie Stein, Claude Terosier, and Thierry Viéville

Contents

- 01. What for ? Context and objectives
- 02. What about ? The AI for citizen key notions
- 03. How to ? Method and production
- 04. So what ? First results and Analysis
- 05. What's next ? Conclusion and perspective

01. What for ? Context and objectives

Understand the how-to of AI science to master AI technology

- Digital science deeply impact our whole society, AI induces a disruptive change
 - > Being a “user” means be subjected to whom creates digital objects
 - > Everyone must be able to choose, co-construct, accept or deny h(er|is) usage
- Now (at last !) our children start learning computational thinking
 - > At school : creative programming, unplugged computer science, ...
 - > Beyond : ludic robotics, maker activities, internet mastering
 - Let's STEAM including AI !

02a. What about ? The key notions

AI is “the science of making machines do things that would require intelligence if done by [human]” (Marvin Minsky 1968).



- Very efficient information processing but without “understanding a word”
- Need as much as possible specific à-priori information, no “free-lunch”



- Programming paradigm : designing architecture and feeding data
- Both symbolic knowledge representation and numeric approximation



- Change our vision of natural (i.e., biological) intelligence, intentionality, ...
- Induce disruptive (not so visible) change in our society

02b. What about ? The key notions



<https://classcode.fr/iai>

- What is artificial intelligence? ... and what it is not.
 - > #historical-aspects #machine-animal-human-intelligence
#numeric-versus-symbolic #knowledge-formalization
#numeric-representation #critical-thinking
- How to do artificial intelligence? ... machine learning.
 - > #data-programming #understand-the-basis
#abscons-words-demystified #discovering-by-doing
- Artificial intelligence at our service? ... issues and levers, in order AI to really be at the service of people.
 - > #beyond-myths-or-rhetoric manipulation
#what-is-already-here #what-could-happen-(or-likely-not)
#applications-with-AI

03. How to ? Method and production

A MOOC and modular resources



- Open and reusable resources (video, text, applet)
- Concrete activities (online and unplugged) to learn by doing



- Auto evaluation
 - + Quiz
 - + Activity result quantification
 - + Real-life actions



- Free attestation



- Forum to
 - Ad-hoc explanation
 - Peer to peer discussions
 - Formation improvement



- * On line “rendez-vous”
- * Event participation (before march and soon ;))



- Contribution to K12 teaching resources and formation

04a. So what ? First results and Analysis



- FUN platform data (from April 2020 to June 2021) :
 - > more than 25000 inscriptions
(37% female, 62% male, 1% not binary)
(32 % under 35 years, 44% between 36 and 55, 24% above 56)
 - > more 3700 persons enjoying at least one module
 - > 1908 attestations of success



- Inria Learning Lab questionnaire :
 - > Above 95% of person having their expectation satisfied (48% fully satisfied)

Source : questionnaire - Inria Learning Lab - 200 answers, beginning of July

04b. So what ? First results and Analysis



- Who is who ?

- > mainly active (54% on activity, 12% retired, 15% students, 9% job researcher)
- > mostly with university level (77% at least bachelors in any field, 10% PhD)
- > rather beginners in the field (63% full beginners, 33% intermediate non expert)



- How much work ?

- > working 10 to 20 hours in average
(about 50% of the persons spend from 2 up to 5 hours per week,
during about 3 weeks, while 25% spend less and 25% more)

04c. So what ? First results and Analysis



- Forum activity :

- > more than 1500 persons have been or are active while
- > more than 8100 are reading the about 912 discussions,
- > more than half of the transactions being on the course contents (e.g., strong versus weak AI, symbolic versus numeric methods, societal issues, ...).



- Hybrid activities :

- > more than 10 online hangouts of 30 to 200 persons during confinement
- > participation in the "educatec/educatice" main French event before
- > more to come ...

05. What's next ? Conclusion, perspective



- What is still needed

- > extend the existing formation with more operational tutorials,
- > manage some technical weakness (recent external resources to be consolidated)
- > complete the existing contents to better help the learner progression
- > offers links towards “next level” initiation in machine learning



- With respect to other offers

- > Not only talking about IA but a real *maker* approach
- > Less technical than the (e.g., Finish) best offers
(e.g., no python programming , but still using real or toy AI platforms)



Towards an “ubiquitary citizen university in digital science and culture”



Acknowledgements: The Digital Direction for Education of the French Ministry, the French Digital University Engineering and Technology, Microsoft, EducAzur, La Compagnie du Code, LINE laboratory, and all Class'Code partners.