

## **DO ALGORITHMS HAVE IMAGINATION?**

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Spring Semester

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Office Hours: by appointment

### Short description:

In 2018 the art world was shocked to hear that a work entitled “The Portrait of Edmond Belamy” created by an Artificial Intelligence (AI) algorithm was sold for \$432,500. Is this the end of art as we know it? Is this the end of human imagination? If algorithms can create works of art, does it mean they can be innovative in other domains, such as drug development and designing mass consumption products? In this course, we will re-think the notion of imagination in light of the rise of AI technologies.

The first part of the course will be devoted to learning the various types of AI algorithms (machine learning, genetic programming, Bayesian algorithms etc.), and to a critical examination of the principles of AI. We will explore the methodological challenges that prohibit algorithms from extending beyond past patterns. We will study the social challenges related to AI, such as the critical reliance on experts in the early stages of training the algorithms and the resulting biases. Also, we will examine the technical challenges, primed by the lack of transparency.

In the second half of the course, we will attempt to understand what imagination is. Our starting point will be the classical definitions of imagination as formulated by Emmanuel Kant. We will map the links between imagination, image, imagining and imaginal. Then, we will investigate the embodied imagination and the complex relations between imagination, body and environment as offered by cognitive sciences' model of 4E. Lastly, we will consider the collective aspects of imagination and its socio-political implications.

Finally, we will assess if algorithms can have imagination and the potential consequences of their innovative products. We will build a theoretical model in which humans and algorithms cooperate from the early stages of definition all the way through to execution.

### Assessment\* :

Midterm: a short paper - 15% of the final grade.

Final requirement: A paper between 8 and 13 pages long (double-spaced, excluding bibliography) – 75%.

Participation: active participation in class/Zoom - 10%.

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\* Please note that if distance learning is required, the assessment procedure, modes of assessment and weightings may be changed.

Attendance:

Attendance is mandatory. Students are permitted a maximum of three absences without penalty. Any additional absences will affect the final grade and may result in failure of the course.

Academic conduct:

Plagiarism is taken extremely seriously. Any instance of academic misconduct which includes: submitting someone else's work as your own; failure to accurately cite sources; taking words from another source without using quotation marks; submission of work for which you have previously received credit; working in a group for individual assignments; using unauthorized materials in an exam and sharing your work with other students, will result in failure of the assignment and will likely lead to further disciplinary measures.