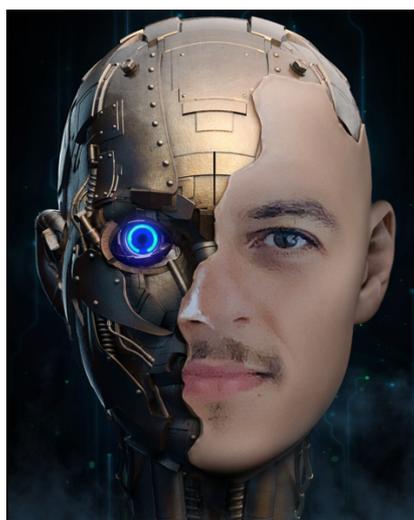


人工智能的符号学

The Semiotics of Artificial Intelligence



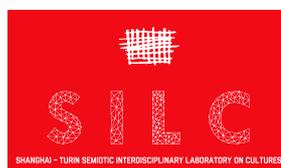
Graduate Seminar, Shanghai University

Massimo LEONE & FACETS, University of Turin / Shanghai
University

Shanghai, 21 June 2021 – 2 July 2021



UNIVERSITÀ
DEGLI STUDI
DI TORINO



Seminar Contents

Artificial intelligence is increasingly present in contemporary human existence. Its applications are everywhere, in private as well as in public life, in entertainment as well as in education. The course aims at interrogating the various signs, languages, and texts that compose artificial intelligence and its interaction with human beings. Specifically, the course seeks to familiarize participants with the most established theories and methods of digital semiotics, and to transmit interpretive sensibility and skills to those who mean to work in the world of AI-based communication. The central question of the course is: what is the status of meaning and language in artificial intelligence and in its interaction with human cognition, behaviors, desires, and needs?

At the end of the course, students a) will know the essentials of semiotic theory as applied to digital communication and will be able to understand the semio-linguistic characteristics of complex communicative phenomena and artifacts involving artificial intelligence; b) will be capable of applying the methods of semiotics to the analysis of various kinds of signs and texts revolving around artificial intelligence, with particular reference to the world of present-day communication and media; c) will develop the ability of autonomously interpreting the semiotic ideologies behind the algorithms of AI; d) will perfect the capacity to formulate and expose their interpretations in a technical language, suitable for a professional audience; they will also train in the comprehension of the technical English of digital semiotics; e) will be put in contact with a new discipline, thus bettering their comprehension skills in English.

Program

Monday, 21 June 2021 (14:10-17:40, Beijing Time)

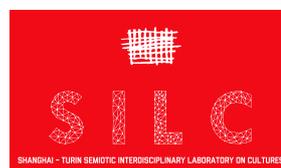
Lesson 1: The Semiotics of Augmented Intelligence

Special guest: Prof. Antonio SANTANGELO, University of Turin

In his book, "*New laws of robotics. Defending human expertise in the age of AI*" (2020), Frank Pasquale, an American scholar already known for his criticism of the society of algorithms (Pasquale, 2015), manifests some concerns, about the adoption of AI technologies in the Western world, which are widespread, both in academic studies (Bostrom, 2014; Kaplan, 2016; O'Neil, 2016; Tegmark, 2018), and in journalism, film and entertainment. The idea is that AI, instead of helping us to improve our lives, may become our enemy. This leads us to question what the adoption of these technologies means within our cultures today. Behind the way we interpret them, there are very precise narratives and semiotic systems, which always have to do with our idea of what it means to be human and to confront - but perhaps it would be better to say "hybridise" - with machines, in a time in which these concepts are rapidly changing.



UNIVERSITÀ
DEGLI STUDI
DI TORINO



Tuesday, 22 June 2021 (14:10-17:40, Beijing Time)

Lesson 2: The Semiotics of Computational Intelligence

Special guest: Prof. Gabriele MARINO, University of Turin

Human creativity has often embraced the forms of what Cramer calls “imaginative computation” (2005) by relying upon tools such as codes, automatism, or controlled randomness, in order to produce pieces of culture. Whereas “executable code existed centuries before the invention of the computer in magic, Kabbalah, musical composition and experimental poetry” (ivi: 3), the very idea that symbols would eventually turn physical — or words would be made flesh — has substantially remained an “obsessive” and “contradictory” phantasm, “because again and again, the execution fails to match the boundless speculative expectations invested into it” (ivi: 125). For the first time ever, only in recent years — namely, since when “deep learning happened [consisting] in a multi-layer network that is trained to recognize an object” and that, in turn, “can be run in reverse so that [it] instead generate[s] images” or other artefacts (Scaruffi 2016: 220) — the utopian dream of reconstructing the linguisticality of art (Lerdahl and Jackendoff 1983; Baroni, Dalmonte, and Jacoboni 1999; Jan 2007) and, thus, making it possible to create autonomous agencies that would create texts and other potentially aesthetic objects came true. The paper aims at outlining a brief cultural history of what we may call “automated art”, with a specific focus on music, from the origins and very first tokens (which may be traced back to Tzara and Dada), through Cage’s “instructional” and Xenakis’ “stochastic” music in the Fifties, up to today’s “AI aesthetics” (Manovich 2019), with notable cases such as Sony’s FlowMachine (2016) and Google’s Bach AI (2019).

Wednesday, 23 June 2021 (19:10-22:40, Beijing Time)

Lesson 3: Artificial Intelligence and Visual Simulation

Special guest: Prof. Bruno SURACE, University of Turin

Deepfake has rapidly transformed itself from a practice reserved for users extremely specialized in computer science to a semiotic phenomenon of mass consumption. Today there are numerous apps capable of generating deepfake videos of great memetic impact from a simple photograph. These apps use more or less elaborate artificial intelligence systems, but are also relevant because they outline new aesthetics and configure semioethical horizons that deserve to be explored.

Thursday, 24 June (19:10-22:40, Beijing Time)

Lesson 4: Artificial Intelligence and Digital Veridiction

Special Guest: Prof. Elsa SORO, University of Turin

In recent times the most popular vacation rental platform in the West, Airbnb, has enhanced its deep learning algorithm, enabling it to confirm the truth of the amenities that hosts claim to offer. The platform has also increasingly utilised AI technology to attempt to determine guests’ trustworthiness through various background checks of their social media profiles. This talk will focus on the semiotic analysis of truth and trust construction via the use of Artificial Intelligence by digital platforms in the hospitality industry.

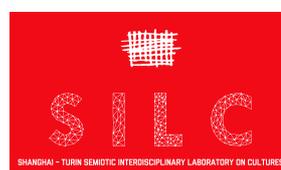
Friday, 25 June 2021 (14:10-17:40, Beijing Time)

Lesson 5: Artificial Intelligence and the Arts

Special guest: Prof. Silvia BARBOTTO, University of Turin



UNIVERSITÀ
DEGLI STUDI
DI TORINO



Artificial intelligence has hit the mainstream in recent years, populating our daily life. It is intrinsic to many of our apparatus, it is part of those processes that act on our way of operating, thinking and making semiosis. The involvement of the face in these processes is preponderant: think of detection, visual or vocal re-cognition, of the traces emitted by the face and then quantified. We will look at the proposals of few artists who work in close contact with AI, and how art is dialoguing and questioning these issues, encouraging the avant-garde, at times, to lay the tracks for pragmatic cross-cutting.

Monday, 28 June 2021 (14:10-17:40, Beijing Time)

Lesson 6: Artificial Intelligence and Virtual Reality

Special guest: Dr Gianmarco GIULIANA, University of Turin

Abstract: In this talk we will inquire on Artificial Intelligence as an *effet de sens* in virtual realities such as digital games. On the one hand, we will examine how non-human agents in virtual realities are narratively programmed to be recognized as intelligent by human players. On the other hand, we will also look at how human users of virtual realities can both simulate and adopt a form of artificial intelligence. This will bring us in the conclusions to critically reflect on the very notion of intelligence from a semiotic perspective.

Tuesday, 29 June 2021 (14:10-17:40, Beijing Time)

Lesson 7: Artificial Intelligence and Digital Falsification

Special guest: Prof. Remo GRAMIGNA, University of Turin

Whilst the semiotics of fakes has a long pedigree, new challenges are lurking ahead. AI as a fast-developing field is indeed posing interesting questions for the analyst of cultures. My talk will offer some conceptual signposts for the study of fakes from the view point of semiotics and discuss some case studies that tackle the problem of digital manipulation of face images by means of AI technology.

Wednesday, 30 June 2021 (14:10-17:40, Beijing Time)

Lesson 8: Artificial Intelligence and Media

Special guest: Daria ARKHIPOVA, Dr Federico BELLENTANI, and Roberto GAMBONI, University of Turin

New broadcasting technologies driven by artificial intelligence are being introduced to the Broadcasting workflow. These technologies intend to increase productivity, efficiency and creative opportunities during programme production, and to give information to viewers quickly, accurately and automatically.

Thursday, 1 July 2021 (14:10-17:40, Beijing Time)

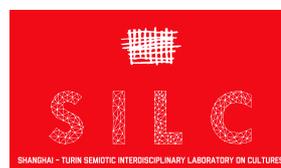
Lesson 9: Artificial Intelligence and Emotions

Special guest: Dr Marco VIOLA (University of Turin) and Prof. Marcello IENCA (ETH Zürich)

Both scientists and the general public tend to think of affective states first and foremost in terms of their phenomenology, i.e., inner feelings. While these inner feelings are inaccessible by others, human beings routinely judge (or misjudge) their affective states based on several cues, e.g. facial movements, bodily postures, vocal emissions or complex behaviors. However, in recent decades, several technologies have been developed with the aim of decoding affective states from several cues. For instance, Facial Emotion Recognition (FER) seeks to read out affective states from



UNIVERSITÀ
DEGLI STUDI
DI TORINO



facial expressions; affective brain-computer interfaces and neuroimaging tools from patterns of neural activations; while mainstream consumer wearable devices do so from physiological parameters such as muscular activations. These technologies greatly differ in accuracy, portability, and in whether and how they rely on subjects' consensus to operate. After a quick glance of the state-of-art of the three abovementioned technologies, we address some ethical issues such as: who and when is entitled to decode our affective states contrary to our will? Which differences are there, if any, in human vis-à-vis machinic decoding? Should different ethical norms apply to different technologies and why?

Friday, 2 July 2021 (14:10-17:40, Beijing Time)

Lesson 10: Artificial Intelligence and Critical Theory

Special guest: Prof. Cristina VOTO, University of Turin

In recent times, different movements have emerged that analyse Artificial Intelligence from a more critical point of view with the intention of rendering an account of its limits. But how is it possible to speak of limits if Artificial Intelligence is more susceptible to mutation than human intelligence? Yet these limits exist and reveal a precise and situated technological archaeology. In the field of maker culture and critical design, different projects that are located on the threshold between art and activism have sought to highlight the limits of Artificial Intelligence and to deconstruct them. The Feminist Data Set (Caroline Sindere), the Algorithmic Justice League (founded by Joy Buolamwini), the Critical Engineering Manifesto (Julian Oliver, Gordan Savičić, Danja Vasiliev), the Xenofeminism Manifesto (Laboria Cuboniks), and the Feminist Principles of the Internet are all projects that, thanks to relational aesthetics and epistemic proposals from intersectional and posthuman feminism, frame the problems of limits, especially with regard to automatic learning. The limit with machine learning-based intelligence is that if these automated systems are fed with biases, they will end up perpetuating biases. So, what does it mean to create machine learning in a way that is capable of mutating the limits of artificial intelligence? Based on a comparative reading of the experiences above mentioned, the aim of the intervention will be to present a semiotic framework capable of differentially exploring automatic learning, data labeling, and training systems. The challenge will be to account for artificial intelligence that is no longer super-intelligent, but fallacy and performative (Austin, 1955).

Reference Books:

LEONE, M. (2019) *论无意味—后物质时代的意义消减* [The Significance of Insignificance; in Chinese; series "Semiotics & Media"]. Chengdu, Sichuan: Sichuan University Press, 250 pp.; ISBN: 978-7-5690-3001-3

LEONE, M., Bruno SURACE, and Jun ZENG, ed. (2019) *The Waterfall and the Fountain: Comparative Semiotic Essays on Contemporary Arts in China* ["I saggi di Lexia", 34]. Rome: Aracne; ISBN: 978-88-255-2787-2; 360 pp.

This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No 819649 – FACETS).



UNIVERSITÀ
DEGLI STUDI
DI TORINO

