

Tra cervelli e macchine: riflessioni su neurotecnologie e su neurodiritti

MARCELLO IENCA

Brain-machine Interfacing: Reflections on Neurotechnology and Neurorights

Abstract: Advances in neuroimaging and brain-machine interfacing (BMI) increasingly enable the large-scale collection and further processing of neural data as well as the modulation of neural processes. In parallel, progresses in artificial intelligence (AI), especially in machine learning, create new possibilities for decoding and analyzing neural data for various purposes including health monitoring, screening for disease, cognitive enhancement, device control and delivery of targeted neurointerventions. As neural data become part of the digital ecosystem, it is important to assess the level of preparedness of our current ethical and digital infrastructures. This contribution discusses some major ethical, technical and regulatory issues associated with neural data analytics and delineates a roadmap for responsible innovation in this sector. This contribution will review a variety of themes including mind reading, mental privacy, cybersecurity in commercial BMI, and issues of neurotechnology governance. In addition, a framework for responsible innovation and governance will be presented.

Keywords: Brain-machine interfacing, Responsible innovation and governance, Fundamental rights.

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