

COMUNICATO n. 1269 del 01/06/2018

Interview with a robot, assessing artificial intelligence with Roberto Cingolani

What do robots know how to do and what can they do? In what ways can they replace and complement human work? Roberto Cingolani, physicist and Scientific Director of the Istituto Italiano di Tecnologia - IIT in Genoa and Massimo Mazzalai, Chief Editor at RAI Trento, discussed the question at the Teatro Sociale. With them there was also iCub, an android robot constructed by IIT. “Robots can do extraordinary things and will be able to do even more”, stated Cingolani “but human beings will always perform better”. A robot can undoubtedly present itself to the public and answer the questions of the interviewer, albeit with a somewhat mechanical voice, as iCub did this afternoon on the stage of the theatre.

While we are still a long way from machines that are self-aware, whatever the predictions of films and science fiction, they are capable of understanding uncomplicated questions and of answering them, also carrying out some actions autonomously. There are considerable possibilities for development, starting above all from the requirements of human beings.

Roberto Cingolani presented the state of the art as regards robotics and artificial intelligence, “trying to be neither a doomsayer nor excessively optimistic”, he commented. Work is taking place on robots that imitate the roots of plants, useful for research, or animals’ movements, with their ability to move around in inaccessible areas, and there are many possible applications now or in the near future. However, man’s leadership is not in question. “Evolution has made us more efficient and we perform better than machines”, said Cingolani “which demand high energy consumption for every operation”. Making complex things simple is man’s main characteristic, added the scientist: the synergy between neurons has made him efficient. The machine must instead measure and calculate every parameter in order to be able to act. For this reason it is impossible to achieve the eclecticism of the biological experience. Thus it is not possible to say that machines are intelligent, they just perform very well.

In a society in which many of these “instruments” are present, it has emerged that it is important for there to be information and rules. In terms of the effects of their diffusion on the labour market, Cingolani admitted that in the short term their impact will be negative for many routine jobs, although new trades will emerge. “In the last few decades”, Cingolani said “revolutions have taken place in the medium to long term and citizens did not pay an excessively high price for change. Today the speed of innovation is much higher and converting workers requires considerable and continuing investment in training”.

One of the most topical and important applications of new technology discussed during the session is represented by prosthetics and biomechanics, with very significant effects on the rehabilitation sector, demonstrating that robotics can also focus on human beings and their needs.

Roberto Cingolani’s presentation: <https://we.tl/jiOpLXFdPZ>

Robot’s presentation: <https://we.tl/hGiP61hpT5>

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