

## Yannis Mastrogeorgiou: Robots and automation

Over the past few years, artificial intelligence has rapidly matured as a field of technology. Machines that learn from experience, adjust to new inputs, and perform tasks once uniquely the domain of humans, have entered our daily lives in ways seen and unseen. Given the current pace of change and innovation, the question for governments and policymakers is how to harness the benefits of artificial intelligence, and not be terrified by the robot takeover of our nightmares. The answer to my point of view is simple: make them work for us.

It is inescapable to point out the socio-economic impact of robots. Politicians, academics and policy makers have begun to engage with the phenomenon of increased industrial automation with more attention, as this represents for many a threat to the jobs of many. In the attempt to clarify who is to blame in the case of an accident resulting from a mistake made by a robot the European parliament has recently proposed to grant some rights to machines, so to make them legal entities. Not surprisingly, this has generated an intense discussion among scholars as well as the general public, as many see this move as the first step towards the creation of additional competitors in a world already short of jobs and overpopulated. In line with an ever increasing automation of our chains of productions, sceptics of the positivity of the robots revolution see the increase of independence of robots as directly related to a decrease of value of human beings – workers or otherwise.

A lot of people who are enthusiastic about technology, affirm that this is the path towards greater social justice and individual growth. Meaning that, by allowing robots to deal with mechanical jobs, we will ensure more opportunities for human beings to follow their own creativity with a more unique profession. This optimistic view is of course very tempting, but we have to be very careful in the assessment of how to move next. We still do not know exactly how Automation will react towards jobs loss and jobs gain.

There are four areas of artificial intelligence and machine learning of importance to the topic of Automation and Jobs:

**Governance:** Countries will need to address the importance of data, as well as matters of privacy and informed consent before making analysis or the algorithms generate findings. Big Data is dynamic. We have to pay attention to the use of Data. This will have impact on jobs and the future of work labor markets: Labor markets will look different in the next few years. There will be fewer middle-skilled jobs. These sorts of jobs have been more resistant to automation so far. But they may disappear soon, as artificial intelligence improves and robots are more able to make decisions based on different situations. This has implications for education, retirement, and social welfare programs. Large numbers of middle-class jobs may be eliminated, leading to unemployment or underemployment. Some jobs will require extensive retraining to ensure that workers can perform the work. Many countries are already facing rapidly aging populations. Should large numbers of workers leave the labor market prematurely, governments will find it even more difficult to fund social state and retirement benefits. **Taxes:** The tax structures of many countries will need to reflect the

decreasing share of GDP to wages and salaries. If labor becomes a smaller part of developed economies, tax structures will need to change to sustain government revenues near current levels, and to avoid creating further disincentives to the creation of jobs. For example, Microsoft founder Bill Gates suggested to put taxes on robots. Social problems: Computer-driven decision-making should be open to scrutiny and inspection, and must not simply be automated versions of intelligent models that could produce social inequality. For instance, some businesses make use of data to offer personalized prices, based on models about future revenue a customer might provide. Some customers who do not match the profile might be invited to leave the shop. This will lead to marginalisation.

## Proposals

According to my point of view there is clearly a need for all institutions and States to keep up as this rapidly changing world impacts their work. We need to definitely encourage Life Long Learning Programmes. Public policy should encourage the development of Artificial Intelligence aimed at establishing a symbiosis between human and machines. Artificial Intelligence should be conceived as a complement to humans, not a substitute. The goal should be a society where people feel empowered, not threatened by AI. That is why skills-oriented actions, including retraining, as well as robust safety nets that accompany citizens during times of transition are of utmost importance. The future of work will require governments to help workers make the transition to new employment. Inspired by Nordic flexicurity models and systems of lifelong-learning in EU countries and abroad, I think that models of higher education must be overhauled and become better and maybe compulsory for everyone above 30 years old. It seems essential to invest in education; these investments should encompass all levels of the education system. New results point to the importance of the early years for later learning, which could be a particular focus for policy intervention. The promotion of research and development (R&D) should be another focus of public policy. Potential returns from R&D are high. In addition, countries should invest in upgrading its internet infrastructure and promote transformation of new technologies into growth. New types of self-employment, such as platform work, also call for new employment regulations. Governments should review the status of these types of employment and, if necessary, extend social security legislation to platform work. New types of jobs need new kind of regulations. This would also include relying on the owners of platforms for social security contributions.