Principles: Fairness and non-discrimination, Sustainability, Transparency and explainability, Responsibility and accountability, Awareness and literacy
Values: Human Rights , Environment and ecosystem flourishing, Ensuring diversity and inclusiveness, Living in harmony and peace
Stakeholders: Civil society, Public sector, Private sector, Academia, Technical community, International and regional organizations

Satellites helping in detecting oil spills turn out to be bad for the environment

As to prevent and significantly reduce marine pollution of all kinds, AI through algorithms for automatic identification of possible oil spills has been developed.

The new technology is efficient in preventing the phenomenon and has a significant role in helping to decrease in oil spills. However, the company remains discreet on the production process of its satellite.

Suddenly, an engineer from the company decides to speak out. He reveals that the production process of the satellite is incredibly polluting, using rare material. It is also found that some of those materials come from mines where children work and where human working conditions are not respects. Lastly, the maintenance of the satellite is also very polluting, using a large amount of energy.

The company making the satellite is forced to change its production process and look for other alternatives as to reduce the footprint of the satellite. To reassure their clients, they become more transparent as to the sustainability of the production /maintenance of their technology.

After the changes are made, the use of this technology is still encouraged as it had positive consequences on preventing oil spills. However, often new technologies require the use of rare materials and have a production process that can be very polluting. Today, we are not in the position to continue such practices as global warming and environmental disaster keep sticking. When developing any technology, it is essential to bear in mind the sustainability of the project, even more when the goal of the system is to reduce the environmental damage.

How could this situation have been avoided in the first place?

Here are our recommendations per stakeholder:

- The technical community has to make sure that from end-to-end the AI support relies on low-carbon energy systems with high integration of renewable energy and energy efficiency. It is also important for them to consider the subcontractor and workers conditions and ensure that they work in good conditions.

- Employees have to be encouraged to speak out when this kind of behavior happens

- Governments, international and regional organizations have to regulate more thoroughly the production of such technologies as to not have a counter effect. The social outcomes of the production have to be also taken under account and sanctioned if they encourage illegal practices.

- Academia has to help the public and the government identify such practices. Furthermore, such misuse has so far not been sufficiently documented. Academia has to help identifying such abuse as to help reduce it. AI are a key tool to reduce climate change and move towards the SDGs if they are used efficiently.

Sustainability & Responsibility and accountability & Transparency and explainability & Human Rights

Know more about this case:

- "The role of artificial intelligence in achieving the Sustainable Development Goals", Nature Communications, https://www.nature.com/articles/s41467-019-14108-y

- "Automatic identification of oil spills on satellite images", Environmental Modelling & Software, https://doi.org/10.1016/j.envsoft.2004.11.010

- "How AI can help us clean up our land, air, and water", Recode, https://www.recode.net/ad/18027288/ai-sustainability-environment

Related work:

- Blood Diamond, Edward Zwick, Warner Bros.2006

- "Environmental Impact of the iPhone", Orchard, https://www.getorchard.com/blog/environmental-impact-of-the-iphone/

- "Sustainable production technologies which take into account environmental constraints", European Journal of Operational Research, https://doi.org/10.1016/j.ejor.2007.05.057

- "A joint-inputs Network DEA approach to production and pollution-generating technologies", Expert Systems with Applications, https://doi.org/10.1016/j.eswa.2015.06.023

- "Technology Depleting Resources and Pollution", Digital Responsibility, http://www.digitalresponsibility.org/technology-depleting-resources-and-pollution