Artificial intelligence for social good

Recent advances in the field of artificial intelligence, especially the now ubiquitous artificial neural network, has sparked a mainstream debate about the risks of intelligent systems – and rightfully so. With increasingly complex artificial intelligence rise crucial questions on its employment for the good of the world; ensuring ethical use of very potent, yet unpredictable intelligent networks. When the widely recognized scientist Stephen Hawking warned about computers emulating and eventually succeeding human intelligence, he highlighted the importance of being aware of the consequences well in advance.

Common controversial topics include the actions of a self-driving car in case of an accident, autonomous weapons, so-called *deepfake* synthetically generated humans, and the possibility of a self-conscious singularity. However, amid discussions on the legalities of artificial intelligence, I would like to instead take a breather to turn the focus towards the more inherently good applications.

Healthcare is a good representative of how artificial intelligence is being reinvigorated through being able to predict, comprehend and learn what humans cannot. Recently, deep learning methods have been developed for better assessing cardiovascular risk factors [1]. Such methods have shown to increase accuracy of diagnoses in the field of medical imaging, as these computer algorithms are especially good at recognizing patterns in images that are hard to recognize, even for trained medical professionals.

From retinal images, deep learning methods have proved the ability to accurately predict systolic blood pressure in patients, whereas doctors typically are only able to characterize severely high blood pressure. Diagnosis of skin cancer is a primarily visual endeavor, presenting opportunities for neural networks increase efficiency and coverage of screening programs [2]. Additionally, we may in the future see availability of such screening processes in the standard smartphone, equipped with an adequate camera.

Another area where deep learning methods show great promise is flood prediction. It is the most common and deadly natural disaster in the world, besides costing billions in damages every year. Efforts have been made by Google researchers to propose a machine learning system specifically developed for early warning of floods [3]. Through real-time water level measurements and creation of elevation maps, deep learning systems may prove suited to classify dangers.

In education, artificial intelligence can be applied in a multitude of ways to improve the student experience. Efficient organization of curriculum and unbiased grading are good examples, but harnessing artificial neural networks to identify learning styles and specifically tailor learning to each student could revolutionize education [4].

Thus, I think it’s important that we sometimes stop and smell the flowers that are blooming from the field of artificial intelligence. Fantastic applications of machine learning are materializing at a rapid pace, though it may seem as if the risks and dangers make the loudest noise at times. I think AI for social good is promising, through and through.

[1] https://ai.googleblog.com/2018/02/assessing-cardiovascular-risk-factors.html
[2] https://www.nature.com/articles/nature21056
[3] https://storage.googleapis.com/pub-tools-public-publication-data/pdf/8486d8912f8fedfd55c3e6dec2a543e48fa28b6a.pdf

[4] https://link.springer.com/chapter/10.1007/978-3-319-19773-9_57