



The New Electricity

Machine learning is already all around us, but what impact will it have on us? **Sonia Klug** talks to the artificial intelligence whizz and thought leader **Caroline Sinders** about the potential of AI to transform our lives as well as the problems that may bring.

If you have scrolled through your social media stream on your way to work, used Google Maps or taken a selfie with your phone, artificial intelligence has shaped your experience. Whether you like it or not, the AI revolution has begun. Caroline Sinders, a qualitative AI researcher/designer, artist and writer, likens AI to electricity or salt mining, both of which shaped our world in profound and unpredictable ways.

Artificial intelligence has been made possible by recent advances in technology, which allow computers to process vast amount of data, using algorithms. A series of algorithms, which are linked together in a system modelled on the brain, is called an artificial neural network. Such systems can adapt to the input and 'learn' from training sets. It allows you, for example, to teach your iPhone to distinguish photos of different family members, if you label them often enough.

Like many in this field, her work spans different aspects of AI – from the technical to creating art inspired by it. She says, 'AI is a transformative ingredient, that touches so many different fields, from policy to product design, which is why it calls for an interdisciplinary approach.'

As a researcher, she has often analysed how people interact with AI applications and how engineers understand and engage with a project, as well as how data sets are used. She has, for example, designed the data flow and labelling system for an Amnesty International project on online harassment, which saw 600,000 tweets labelled by 6,000 volunteers.

Her AI-inspired artwork has been widely exhibited, from the V&A in London to the

MoMA in New York, and the European Commission has just commissioned her to produce a series of sculptures.

She is also a fellow of the Mozilla Foundation, writing a guide on how to make AI more accessible. For her making AI more transparent is key for a future in which humanity as a whole benefits from this technology.

Caroline welcomes open source projects, such as the Mozilla's Common Voice, which is compiling a gigantic database of voices in all different accents and languages. As voice recognition is becoming standard, it's essential to have a data set that understands accents, so that people who may not speak standardised English aren't excluded from services or using certain technologies. Common Voice also has great potential to help disabled people who often rely on voice recognition technology.

There is no doubt that AI can improve people's lives and has even been hailed as a saviour that can make this world sustainable and fair. Can AI save us?

'Again, it's like electricity or technology. Has that saved us?' asks Caroline. 'I don't know, but it's important, it's transformative and has changed everything in a way that, I can argue, was for the better. However, there are so many dangers and there is so much to learn. How many people have died in car accidents before they re-designed the roads with lanes and stop signs? How many horse-drawn carriages were hit by cars? These may sound like funny or irrelevant examples, but it's really important to think like that. With AI we're in the equivalent period of the first iteration of horse drawn carriages and cars on the road together.'

So what does the future hold? Caroline thinks that the world will eventually be something very fascinating and interesting with AI. She says, 'It's important to think about what that could look like, but we also need to focus on the now and how we can make sure that the introduction of AI is not as dangerous as the integration of new technology has been in the past.'

One of the great dangers of AI is bias. Unlike humans, machines appear to be free of emotion and prejudice, yet one of the biggest ethical problems surrounding AI is that this technology has shown to reproduce the prejudices, which are already ingrained in the training sets.

Caroline says, 'Policing is a field where AI reproduces a lot of bias. PredPole, which stands for Predictive Policing, is based on policing data, which is biased as black neighbourhoods are over policed, which skews the data. Likewise, self-driving cars have a hard time recognising black skin. If they have been trained to identify white skin, rather than black skin, we can imagine many issues with that.'

'AI can be misused in any context, from insurance to healthcare, where AI decides if you're approved or not. It's important to ask if the data sets used is robust enough and if it can be audited.'

She thinks any AI applications like this should be based on three principles: legibility, the ability to audit and impact/interaction. These principles are from her work with the Mozilla Foundation, looking at ways to create transparency in machine learning. Legibility is not just about making the code public, but explaining what it does and the processes it uses. This will help the systems and data sets to be audited. Finally, she believes that there needs to be a mechanism to give feedback and for this feedback to have an impact on the system.

'A lot of the problems with AI is that we often don't have a clear understanding of what the data sets look like. For example, we need to

know how many women and non-binary people were in the data. Where are they from? Are they just from English-speaking countries? Google's tool Facets is also working on code that helps to visualise and hence understand and analyse machine-learning data sets.'

Many are concerned about the effect of AI technologies on people. For example, some blame even more unrealistic beauty ideals on AI-'enhanced' selfies and editing possibilities, others say that social media addiction is caused by the algorithms that display the content that's likely to engage us most. 'I don't think any of this is a problem with technology, but with capitalism and consumerism, where AI often gets the short end of the stick.' She says. 'Those are design choices companies make to sell more advertising. It's not the fault of technology, but technology being capitalised by executives. It's all to do with what the people in power do with it, and that's been the same for hundreds of years. Sadly, consumer safety has always come after innovation.'

Sci-fi films show our fascination with human-like machines and there have been many attempts to create robots that produce art. Can computers be creative? 'I think people are inherently creative and AI is a tool to see things in a new way or show unusual patterns, which can inspire our creativity.'

So if not art, what does the future hold for AI? 'I hope for human-rights centred AI as well as for interesting AI, which is not just about predictive analysis. At the moment AI is like black boxes - there aren't any great interactive products for users. I look forward to more space for experimentation and exploration.'

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