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A Conversation with Great Minds

Statement submitted by

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Moderator
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INTRO

Good Morning Ladies & Gentlemen and welcome to the Conversation with Great Minds. Our panel this morning will focus around frontier technologies for sustainable development.

We are seeing disruptive technologies and innovation being adapted and used all around the world and this has become part of our lives today.

From the healthcare industry, where artificial intelligence is assisting doctors in diagnosing diseases, to the financial sector where its being used to make decisions on credit applications. Autonomous vehicles in the industrial sector. Internet companies and retailers using targeted social media ads that seem to know what you need, automated decision-making used in the criminal justice system and employers using AI to assess candidates in the workplace. The list is endless.

It's great that technology is able to do and achieve things at a faster speed and capacity than the human mind, but there can be errors because technology is created by humans. And, as we human beings are making strides when it comes to equal opportunities, transparencies and fairness, we must ensure that these frontier technologies that we have created remain fair and neutral.

We need to get it right. We know that frontier technologies can indeed make sustainable development a reality. We know that they can be used to help find global solutions to economic, social and environmental challenges. And it's near impossible to talk about the sustainable development goals

today without mentioning technology and the role it plays in boosting its ambitious agenda.

And, we must also ensure that the economic, social and environmental benefits outweigh the threats. Ethical decision making must evolve, and we must encourage a global conversation around frontier technologies that respect diversity and inclusiveness.

So for an hour this morning, it's an absolute pleasure to be able to tap into the Great minds of Prof. Dame Wendy Hall. Prof. Jürgen (you-again) Schmidhuber (Shmid-hoo-buh) and Dr. Carlo Rubbia (roob-ya)

Very quick intros:

Prof. Dame Wendy Hall is a Professor at the University of Southampton and Executive Director at the Web Science Institute. She was one of the first computer scientists to undertake serious research in multimedia and hypermedia, she has been at its forefront ever since.

Prof Jürgen (you-again) Schmidhuber (Schmid-hoo-buh) is a computer scientist renowned for his work in the field of artificial intelligence, deep learning and artificial neural networks. His labs Long Short-Term Memory (LSTM) have revolutionized machine learning and AI and are used by billions of users around the world.

Dr. Carlo Rubbia was jointly-awarded the 1984 Nobel Prize in Physics for work leading to the discovery of W and Z particles at CERN. His recent research activities are concentrated on the problem of energy supply for the future, with particular focus on the development of new technologies for renewable energy sources.

Question Time

FRONTIER TECHNOLOGY FOR SUSTAINABLE DEVEOPMENT

Mention the technological projects you are working on and the impact it could have on sustainable development. Start with Prof. Jurgen (you-again) because you are developing a general AI that is capable of imitating human behavior and learning for itself. Briefly talk around that, and the timeline and what this means for sustainable development.

Prof. Wendy, web science is about understanding how machines and people work together and you are also working on a web observatory. How does this connect with sustainable development?

Dr. Rubbia, your most recent work has focused on renewable energy. In order to meet our goal of access to renewable energy for all by 2030, what tech advancements do we need to see?

RULE OF CONDUCT

We have talked about the opportunity, let's move over to talk around the risks, the threats and ethical dimensions.

It's difficult to not point out the risk of AI and automation taking the place of humans and jobs. You co-authored the UK's AI strategy review, and you've been vocal about how in spite of the ethical conversation, we need to continue to build AI systems and we'd like to know why because some might argue that it should be the other way round.

The UK's AI sector deal was heavily focused on the creation of jobs and the economy. Our sustainable development goal is to create full and productive employment for all. Share insight into recommendations made in your review and are you seeing these being put into action?

Prof. Jurgen, you're often referred to as the father of AI because of your pioneering work in the field of AI. So when you see headlines talking about the moral consequences, what's going through your mind and how do we how do we strike the right balance between the transformative nature of technology and its disruptive nature?

How do we start to create a rule of conduct or morals for robots that can learn on their own?

INCLUSIVITY / TECHNOLOGY DIVIDE

Dr. Carlo you were DG of CERN when the www was developed by Sir Tim Berners Lee and you made critical decisions which were significance for the development of the internet and its application in China. What lessons on inclusivity could be take on from your experience at CERN?

Still on the technology divide and the threat of a widening inequality gap. How do we minimize inequality and ensure that no one, no country, no region of the world is left behind by technology?

COLLABORATIONS & THE FUTURE

We know that no single country can manage frontier technology on its own. If frontier technologies hold the key to sustainable development, then international cooperation is needed. But there are differences in policies, agendas, regulations ... differences in culture and morals. How could we possibly make this work?

In a lot of developing countries, there is a lack of talent and insufficient funding for research and development. Global scientific collaboration is needed to build capacity in many developing countries. CERN is a great example of international scientific collaboration. What tips could others learn from CERN when it comes to international collaborations?

What about the United Nations? In your opinion, what role should the UN play in building a bridge and driving a global discourse around the possibility of frontier technologies for sustainable development?

FUTURE

It's impossible to predict the future but looking at frontier tech and the work that is being done, paint a picture of AI in 2030 and the impact that these advancements could have on sustainable development.

We know that frontier technologies could help to meet the sustainable development goals in the long term, but where are the short term opportunities (5-10 years).

Still on opportunities, almost every day in the media we hear about AI, blockchain technology, machine learnings and IOT, and how they are being used to make life easier. Are there

any other scientific applications or technologies that hold promise but are perhaps not getting as much attention?

I think that's a good place to leave it. It's been an absolute honor to tap into the great minds of Prof. Dame Wendy Hall, Prof. Jurgen Schmidhuber, Dr. Carlo Rubbia.

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