



Conversation with Daniela Rus and Paul Hermelin

Paul Hermelin, Chairman and CEO of Capgemini, and Daniela Rus, head of the Computer Science and Artificial Intelligence Laboratory at MIT, as well as one of the world's leading researchers in robotics and artificial intelligence (AI), share their views on the impact of technology, and more specifically AI, on our present and future, and how both can support major social and environmental evolution.

What are your thoughts on the current pace of digitalization and why are you convinced that the ongoing digital revolution is different from the waves of IT transformation that have occurred in the past?

Daniela Rus: To start off, let's define what we're talking about. There are a lot of different things that fall under the concept of digitalization! First, there's the digital marketing revolution, mobile apps, analytics and AI revolution, then there's the cloud revolution, cybersecurity and the encryption revolution, and finally industry 4.0, robotics and automation.

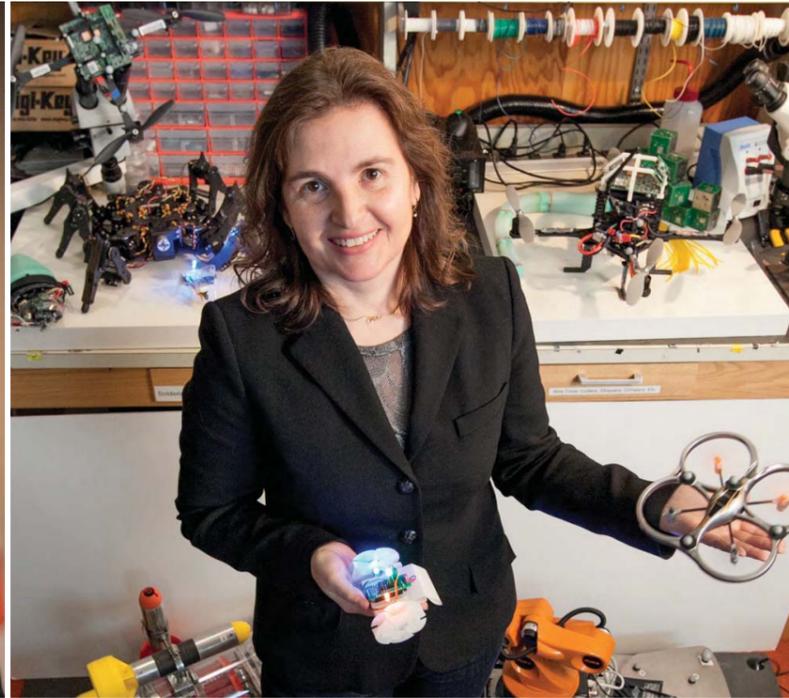
Paul Hermelin: A little while ago, the main topic was Uberization, which was the total upheaval of a certain business model. It's relevant for activities where capital goods are being patently under-utilized. Internet of Things (IoT) solutions for both the connected home and for industry, and blockchain,

are now creating immense value by unlocking data and leveraging all new technologies.

Daniela Rus: We are just at the beginning of a new era. Digital is changing the products and services companies provide to their customers and the way these are developed, produced, and delivered; it is impacting how businesses operate and is reshaping our behavior and society at large. We are seeing tremendous progress in the development of tools to help us with physical and cognitive work. In particular, AI brings machines the ability to reason. And machine learning enables machines to improve, make predictions and creative adaptation routines.

“Many human relations jobs will be needed to bridge the gap between algorithms and people; the ability to communicate will be essential. Artificial intelligence will not replace EQ, or emotional quotient.”

Paul Hermelin



“AI isn’t inherently good or bad, it is what we choose to do with it. We can create incredible value for all.”

Daniela Rus

Daniela Rus is the Andrew and Erna Viterbi Professor of Electrical Engineering and Computer Science, and Director of the Computer Science and Artificial Intelligence Laboratory (CSAIL) at the Massachusetts Institute of Technology (MIT). Her research is in robotics, mobile computing, and data science. Rus is a Class of 2002 MacArthur Fellow, a fellow of the Association

for Computing Machinery, the Association for the Advancement of Artificial Intelligence, and the Institute of Electrical and Electronics Engineers, a member of the National Academy of Engineering, and a member of the American Academy of Arts and Sciences. She earned her PhD in Computer Science from Cornell University.

You’re talking about creating value. To what extent will AI, which still provokes a lot of fears, benefit all of us?

Paul Hermelin: I believe that everyone will stand to benefit from AI. The real-world applications of artificial intelligence are already numerous. Algorithms can already “teach themselves” by analyzing intelligently massive volumes of data to find unexpected correlations and meaningful causal links. In the logistics industry for example, predictive capabilities allow organizations to accurately address customer service and traffic patterns as well as weather events that affect shipping and port behavior, and hence reduce their carbon footprint and improve their On Time Delivery ratio.

Daniela Rus: We first must understand that AI is a tool; like any technology, AI isn’t inherently good or bad, it is what we choose to do with it. We can create incredible value for all, starting with concrete benefits in our daily life. In healthcare, AI will improve our ability to diagnose and treat disease.

Such advances raise some important questions. How do we prepare all parts of our society for a future with AI, machine learning, and advanced robotics? And how do we build a digital future that serves us all?

Paul Hermelin: Computer scientists as well as IT services and consulting companies have a major social role to play to help people apprehend the power and potential of these disruptive technologies and be part of this revolution. First, this evolution requires the quick mobilization of all economic players so that digital-affiliated jobs can be created outside the biggest cities, and the workforce trained. Moreover, AI will generate a massive wave of augmented work. Many human relations jobs will be needed to bridge the gap between algorithms and people; the ability to communicate will be essential. Artificial intelligence can amplify the role and the potential of a wide variety of jobs, notably qualified jobs, but will not replace EQ, or emotional quotient.

Daniela Rus: As the mother of two daughters, I am very aware of how important it is to make sure that girls are given every opportunity to be exposed to science and technology. The digital transformation, by providing new avenues for their economic empowerment, increasing their employment opportunities and access to knowledge and general information, can contribute to greater gender equality.

Can AI continue to develop without ethical boundaries?

Paul Hermelin: AI can’t choose where, when, or how it’s used, including whether it’s used for good or bad intentions. This puts the burden for the ethical use squarely on human shoulders. Digital technologies are part of a bigger picture that needs to be patiently and carefully developed by theorists, scientists, engineers, digital creators and civil society in order to co-construct an empowering ethical dialogue and discourse. In the area of human-computer interaction, there can and should

be a systematic ethical debate, without slowing the momentum of innovation.

Daniela Rus: Indeed while I don’t believe we can (or should) stop the advance of technology and innovation, we do have to think critically about how to integrate AI into our lives and prepare for new kinds of human-robot interactions. I think we’re only a few years away from a future where robots are as commonplace as smartphones are today – where you will be able to walk into a local store to order your own personal robot for specific tasks around the home or office that will directly improve your life. 🤖