

Q&A - DAVID REGER

What's cognitive robotics?

Cognitive robotics certainly heralds a whole new age. To put it casually, I would say that smartphones are coming with arms and legs. In other words, assistants that relieve us not just virtually, but in very real terms. Physically.

Three important characteristics make up a cognitive robot. First, the ability to fully perceive its environment - I mean seeing, hearing, and even feeling. Second, the ability to process these stimuli and react independently to new and unknown things - without being programmed to do so beforehand! And third, to be able to "remember" what they have learned for the future, in order to further develop existing skills

Such robots are only able to reliably recognize people in their vicinity - the first prerequisite to never endanger them by making a wrong move. With cognitive robotics, we are entering an era in which we will no longer lock robots behind safety fences in industrial facilities. We will begin to use them alongside humans in everyday life. This will open up completely new perspectives on our public life when it comes to dangerous jobs or the shortage of skilled workers. I myself am even convinced that we will soon have the first household robots cleaning the bathroom or putting away the dishwasher, so that we can all have more "quality time" again, as the Americans say.

How did you come to found Neura Robotics?

Before founding Neura, I had already been in the world of robotics for seven years, also managing companies and developing robots for industrial applications. In almost all industrial projects, we had to adapt the existing environment to the robot - usually in a very complex and expensive way - in order to meet the high safety requirements. The industry had always done this for decades without anyone questioning it much. But I was sure that in the long run, it would make more sense to modify the robots themselves so that they could be used safely in any environment alongside humans. It was clear to me - even in 2019 - that it was possible to equip robots with senses and give them the ability to process perceptions quickly and safely. But as is often the case in a mature industry, it's difficult to leave the comfort zone and enter uncharted territory. Otherwise, we would have had an alternative to the internal combustion engine much

longer ago. So, I ended up founding my own company to realize my idea of cognitive robotics.

What does the name Neura stand for?

The name Neura is inspired by nature and is based on the term neurons. In nature, neurons are electrically excitable cells, also known as nerve cells. They transmit stimuli from the environment to the brain, for example, where they are then processed and trigger a reaction. And that's pretty much exactly what makes a cognitive robot: the fast and reliable perception and transmission of environmental stimuli to which a reaction is to be made.

Do you have concerns about the misuse of cognitive robotics?

Since I started looking into the future of robotics in general and cognitive robotics in particular, I have been fascinated by the potential it holds for our society. Unfortunately, history has also shown that great inventions were sooner or later also somehow used against humans: For military purposes or for surveillance. But it's always the people themselves who are behind such misuse of inventions.

It is therefore not enough if we give a robot laws according to which it distinguishes "right" and "wrong". I mean, already at home or with friends we experience every day that "right" and "wrong" are perceived very differently. And on a global level, many ethical questions, let's just compare China and the West, are answered extremely differently.

So, at some point, we as a whole human race will face the great challenge of finding a common ethic, with or without cognitive robotics.

My vision is one of exclusively peaceful robotics that serves humans. At Neura, we do nothing else. Our robots cannot be used against humans in any way. That is part of our special human recognition system, which acts completely independently of artificial intelligence and what is learned.

What differentiates Neura from other startups in robotics?

Three very important points distinguish Neura from other startups in the world of robotics: first, we're willing to literally reinvent the wheel and do everything differently than usual. This is the only way we managed to develop not only the world's fastest and most precise cobot within three years, but also all the components such as sensors and actuators. These

are - literally - the new wheels that we developed and manufactured ourselves. And we did it cheaper and better than we could've bought them from the usual suppliers. But the real advantage is that we now have progress in our own hands and no longer have to hope for innovations from suppliers

Second, as far as I know, we're the first company in the world to develop cognitive robots. In other words, robots that perceive their environment with all their senses, recognize people, react and learn independently

Third, and perhaps the most important parts of Neura Robotics, we don't just develop products. Rather, we provide a technology platform to which partners from around the world - not just robotics - can connect. Our components and robots combined with the countless ideas and know-how from a wide range of industries - this makes many special applications possible in a very short time that we couldn't serve alone. The best way to compare this is with a smartphone and its operating system, which has only really come to life and become indispensable thanks to millions of apps from all sectors. We call this idea the Neuraverse or Neuraverse.

Why do you believe in Germany as a business location?

Germany is always referred to as the land of poets and thinkers. But that is only half the truth. At the end of the last millennium, we were above all the land of inventors and engineers. Germany was the world's technological leader in many areas and "German" was synonymous with precision, especially in mechanical engineering or automation. With the dawn of the Internet age, however, other things first became important, especially software. And here, as we know, Silicon Valley was right at the forefront. But in the meantime, we've noticed that the world doesn't just work virtually. Even today, of course, the big challenges are absolutely real and material. Without precise, resilient, high-quality hardware, no "AI" will be able to truly serve humans in the future. For the development of high-precision and high-quality mechanics, Germany has exactly the right brains and also the training structures.

What kind of person are you, David?

My mind is quite active and full of ideas on how to improve the world. This is always preceded by the fact that I observe our society, our whole togetherness, pretty closely and critically. But of course, I'm not the type who likes to sit down at the regulars' table in the evening to complain about things that don't work. And especially now, when a new era for our daily lives is beginning with cognitive robotics, I would like to bring the many thoughts and proposed solutions that have been maturing in me for

years into society! As Senator for Economic Affairs, I have the opportunity to provide impulses for politics and society where they are perceived.

Others would say about me that I am tireless, ambitious, and a bit over-motivated. Perhaps even that I am never satisfied. And there is a lot of truth in that. Of course, I would put it a little differently - based on my own perception. It's simply important to me to make efficient use of the time and energy I've been given. A very simple example from everyday life: in the morning while I'm brushing my teeth, I read the newspaper or check my e-mails on the side. Otherwise, I feel like I'm wasting time. After all, I have one hand free and my brain is not really challenged while brushing my teeth. In terms of life, of course, it's not about brushing your teeth and checking e-mails. I always give 100% to what is important to me. My family and my company. I try to keep the distances in between short and use them as sensibly as possible.

Why are you getting involved as a Senator of Economy Europe

My mind is quite active and full of ideas on how to make the world a better place. This is always preceded by the fact that I observe our society, all our interactions, quite closely and critically. But of course, I'm not the type who likes to sit down at the regulars' table in the evening to complain about things that don't work. And especially now, when a new era for our daily lives is beginning with cognitive robotics, I'd like to bring the many thoughts and proposed solutions that have been maturing in me for years into society! As a Senator for Economics, I have the opportunity to provide impulses for politics and society where they are perceived.

What drives you?

Technology has always fascinated me. I was fascinated by tractors when I was little, and later by my first motorcycle, which I had to work on until it ran at all. Later came the desire to do something useful that would serve us, humans, make our lives easier, and perhaps make the world a little better. These two themes in themselves have always been a driving force in my life. When I realized that I was blessed with the abilities and the path in life to combine these two things - in other words, to create technology that could actually solve many problems - it was another turbo boost. That's when my own personal warp drive ignited.