The COVID-19 Pandemic: An Accelerator for the Robotics Industry?

By Daniel Leidner

On 4 March 2020, in Malaga, Spain, shortly before COVID-19 became a global pandemic, hundreds of roboticists gathered at the dinner of the European Robotics Forum—without the need to wear face masks or maintain social distances. During this evening, the euRobotics Technology Transfer Award was presented to a consortium formed by UVD Robots for a robot equipped with ultraviolet (UV) lights for disinfection, a technology most of the attendees had never thought of before.

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Two weeks later, all of Europe entered lockdown. Many things have changed since then. Not only have virtual conferences become the new normal as governments and hygiene concepts regulate public gatherings; many people have also learned about UV disinfection robots. Just recently, the European Commission bought 200 systems from UVD Robots to be distributed in hospitals across Europe.

The example is representative of the unprecedented technology push sparked by the high demand for rapid solutions to address the ongoing pandemic. Other branches of robotics are also benefiting from this momentum. For instance, there has been an increased demand for mobile telepresence robots that enable social interaction, patient monitoring, and diagnostics through personalized video calls. Robots designed for logistics in restaurants, hotels, and public spaces have been repurposed to work outside their original application area and distribute food and medicine in hospitals and care facilities. And while still experimental, compliant robot manipulators have been showcased for SARS-CoV-2 testing by means of throat and nasal swabs.

Yet, although it might appear the pandemic has ushered in the age of robotics, we are still far from universal service robots that can truly help us overcome infrastructure shortcomings in hospitals, nursing homes, and the testing facilities of diagnostic laboratories. This situation is even more pressing as shelter-in-place orders and social distancing regulations further diminish the workforce. If we really want to make a difference here, we need to act more decisively and boldly take our robotic solutions out of the labs and into the real world.

Telerobotics could be key to this endeavor. Several companies have begun exploring the possibility of teleoperating mobile robots with dexterous manipulation capabilities to perform various tasks during this pandemic. For example, the Japanese company Telexistence revealed plans to implement remote control for robots designed to stock shelves in supermarkets and grocery stores. Meanwhile, the German Aerospace Center has converted its control room, normally used to teleoperate robotic assets for space exploration, into a call center for service robots meant to be used in 24-h care of the elderly and people with severe motor impairments. What is considered to be the first step toward an ecosystem for robotic assistance in care has the potential to protect high-risk groups from being infected with pandemic pathogens.

It remains to be seen which solutions will emerge from the challenges of the COVID-19 pandemic. But if we take advantage of the current momentum and act now, chances are that the robotics community will be able to provide effective responses to the next pandemic and continue to accelerate the transfer of technologies to society.

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