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Assistive Robotics and their Uses During the Pandemic

Thomas Klassen

Jeremy Evert

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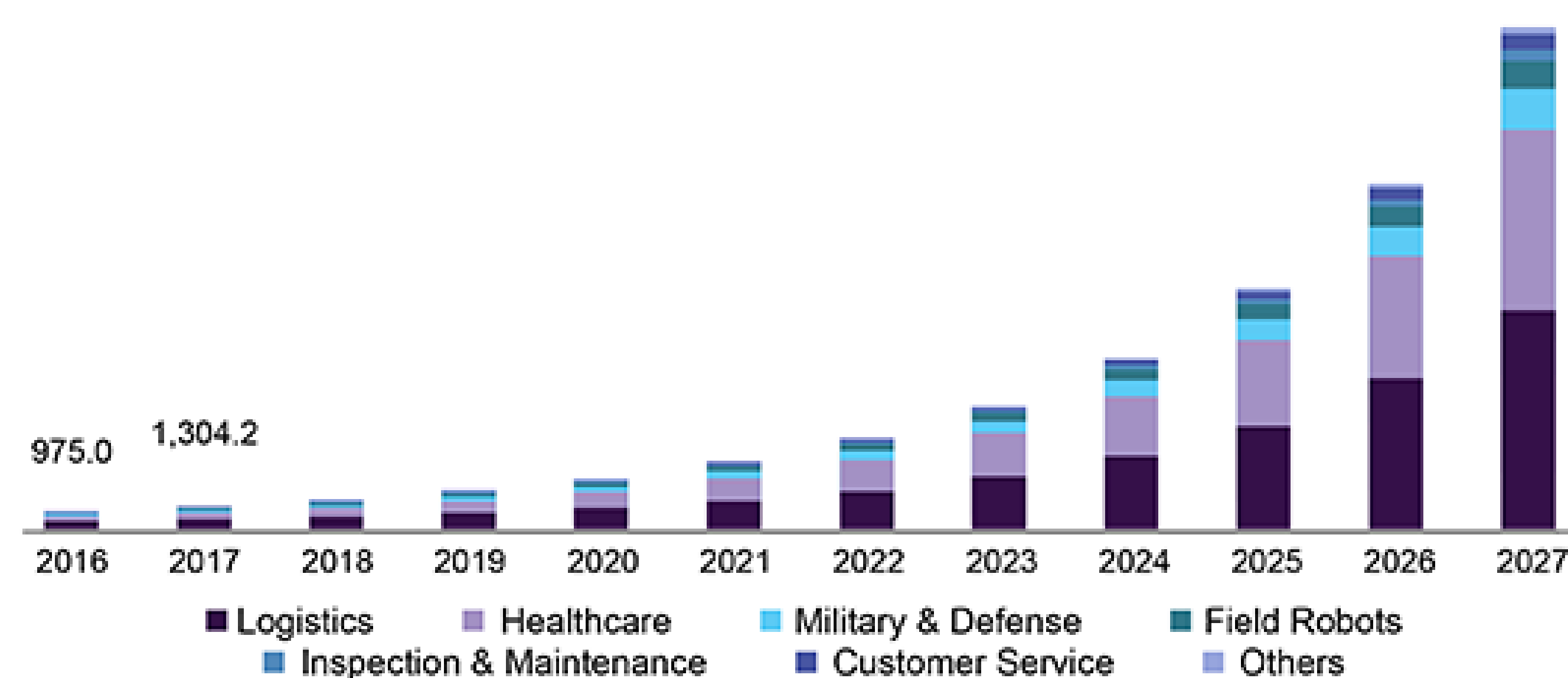
Thomas Klassen | Dr. Jeremy Evert | Department of Computer Science and Engineering Technology

Abstract

- “Assistive Robotics” defines any device that can sense, process sensory information, and perform actions that benefit people with disabilities
- This form of technology can be used on a much higher scale with a greater number of uses
- We have an opportunity to expand the usage of assistive robotics to help combat COVID-19

Growth of Robotics Market

U.S. professional service robots market size, by application, 2016 - 2027 (USD Million)



Source: www.grandviewresearch.com

Social Isolation and Mental Health

- Due to social isolation, thousands of people are suffering from loneliness and several mental health issues
- Social robots can fill the gap by providing physical and social interactions while also having the ability to assist in daily tasks.

Combating COVID-19

- There are numerous ways that robotics can help combat or contain the COVID-19 virus including:
- Disinfection robots that use ultraviolet light for disinfection
- Mobile robots that can move freely while monitoring the body temperature of several people at a time
- Implementing a robotic nose swab for COVID Testing



Current Research Project

- I am currently working with an iRobot Create2 in an attempt to make an autonomous robot that can carry out several functions
- Starting with navigation, the robot will be able to move autonomously while avoiding obstacles
- I plan on using the attached camera to recognize and monitor the distance between individuals to improve social distancing
- Lastly, programming the robot with facial recognition software and contact tracing to recognize those with COVID symptoms and alert others in the area



References

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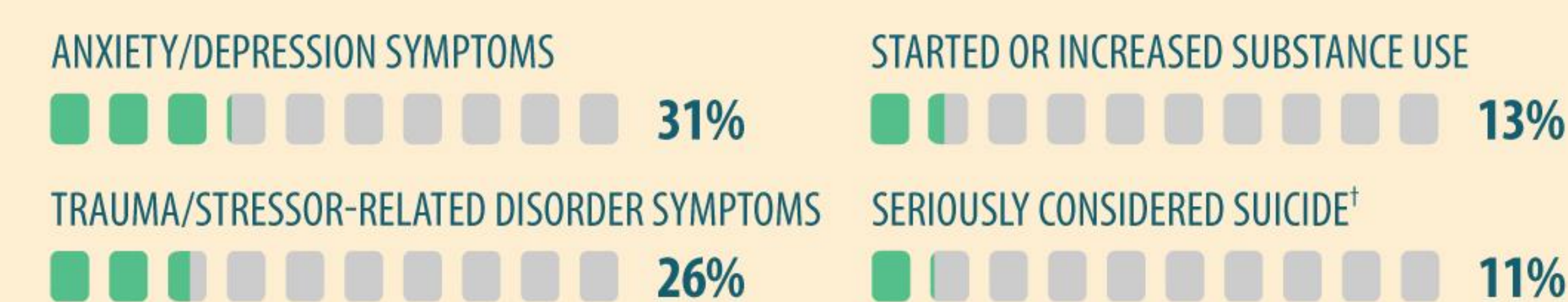
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During late June, 40% of U.S. adults reported struggling with mental health or substance use*



*Based on a survey of U.S. adults aged ≥18 years during June 24-30, 2020
[†]In the 30 days prior to survey

For stress and coping strategies: bit.ly/dailylifecoping

CDC.GOV

bit.ly/MMWR81320

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