Self Driving Cars: An Exciting Proposition for People with Disabilities

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Self-driving cars have almost become a staple of everyday conversation. They are set to be one of the significant innovations of the 21st century, once they become broadly available to the public. Self-driving cars present radically new ways to consider transportation and accessibility. These are cars in which human drivers are never more required to operate the car securely. Also known as autonomous or driver-less cars, these are combined solution integrated with sensors and software to control, manage, and drive the vehicle.

Figure 1: A dashboard display of a self-driving car

Currently, there are no authorized operating, fully autonomous vehicles in the world and partially autonomous cars and trucks with varying amounts of self-automation, from conventional cars with brake and lane assistance to highly-independent, self-driving prototypes. Various types of self-driving technologies have been developed by Google, Uber, Tesla, Nissan, and other major automakers, researchers and technology corporates. While design details differ from each manufacturer, most self-driving systems create and support an internal map of their surroundings, based on a wide array of sensors, like radar.

It is well-documented that transportation remains a significant obstacle for people with disabilities, whether it be public transportation, para transit or private transportation. This has been a long-standing challenge despite many government reforms and legislative advances. Mobility is a serious factor that is hindering many people with various functional limitations and elderly to work and being trapped at home.

Self-driving cars could revolutionize how people with functional limitation get around their neighborhoods and even commute far from home. Autonomous vehicle technology on its own is not sufficient to assist people with functional limitation to become more independent, but simultaneous advances in machine learning and artificial intelligence can allow these cars to understand delivered instructions, examine nearby surroundings and relate with people. Combining these technologies could provide autonomous mobility with practical assistance that is specialized for a user's abilities and needs. Elderly and physically disabled people are the most to adopt self-driving cars as it will increase their independence and access to work or other locations. Self-driving cars may also be helpful for people with mental health issues; for example, some people with anxiety disorders or depression may have days when driving is only too much for them. This will help people get out of the house to work or for leisure, which can help the management of or recovery from mental health disorders.

There are many wrinkles to be ironed out before we can rely entirely upon this technology, but the general excitement (particularly among the disabled community) is palpable. Accessibility, Safety, Insurance and legislative laws are the major factors which need to be resolved and secured before the autonomous cars can be seen on mainstream use. Once these issues are resolved, it will not be long to see such cars on daily use. They have the potential to transform neighborhoods and people' lives including people with functional limitations and often both literally and figuratively left behind. With precise planning and study, autonomous vehicles can accommodate even more people with significantly enhanced independence and confidence in their lives.