Guide Bot: A Robotic Guide Dog

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Visually impaired humans lead very difficult lives. They often must rely on external sources to help them. Many of these external sources are guide dogs and walking sticks. The problem with both sources is that guide dogs can be very expensive and require a lot of care from the visually impaired human. The cost of owning and maintaining a guide dog could be as high as $50,000. Walking sticks can cost very little money but won't automatically avoid obstacles like guide dogs can do. Due to these reasons, I decided to create a cost efficient solution called Guide bot, which is a robotic guide dog that has benefits of both tools and guides the visually impaired person move around safely. The prototype version is designed entirely of Lego Mindstorms and Lego robotics. I have programmed the Guide bot so that it can be controlled manually using a touch sensor or infrared remote or just through voice commands. While activated, it can automatically detect and avoid obstacles, identify upcoming level changes and inform the user, just like a guide dog. An important feature that the Guide bot possesses is that, it has a safety alarm button that can be activated by the user in order to receive help in case of emergency. It is very affordable for a visually impaired person as it can be owned for about 1/10th of the cost of a guide dog and does not require much care.

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