Arduino Navigation for the Visually Impaired and Elderly

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An Arduino microcontroller is a device that can be used to create many different gadgets and tools that can be used for entertainment, efficiency, and data processing. The goal of the experiment was to assist my 96 year-old grandma, my blind uncle, and other potential victims of poor vision navigate through daily obstacles with ease instead of having to suffer through them everyday. It would need to be wearable, consistent, cheap, detect physical obstacles, and energy efficient. A prototype was created, containing a haptic device or motor, breadboard, sensor, and buzzer all neatly placed on a belt. It was then programmed to locate objects within a certain range/distance, requiring enough to warn the user at the correct moment, but not prematurely or late. Preliminary testing showed that the device could indeed be used to assist the elderly cover far distances safely, and efficiently without needing to worry about bumping into anything or falling. This device has potential to impact the community greatly and it is with great hope that this project gains support from the tech wizards in industry.
Keywords: Arduino, obstacles, range, distances, visually impaired, elderly, navigation, belt, haptic, device, buzzer, wearable.

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