SFWRENG 4G06 - Contract & Proof of Concept

Group: NextStep (Group 10)

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Department of Computing and Software McMaster University November 15, 2021 Our project, NextStep, is a wearable device that aims to remove the need for visually impaired people to use a walking stick to navigate in indoor settings. The device would be able to detect stationary and slow moving objects in the user's path and provide them with the necessary feedback to avoid running into said objects.

We, Group 10, guarantee that our final demonstration for SFWRENG 4G06 will include the following elements:

- A demonstration of a simulated scenario (indoor setting) where a user wearing NextStep avoids a few simple static obstacles (stationary people, desks, chairs, etc.) in their path.
- A demonstration of the device's ability to detect the velocity and position of slow-moving dynamic obstacles (eg. walking people).
- A demonstration of NextStep's ability to provide real time feedback to the user regarding the positioning of obstacles in their path.
- A high-level walk through explaining the sensor fusion algorithms used to combine data from different sensors to reduce the amount of uncertainty in object detection.

Signed,

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