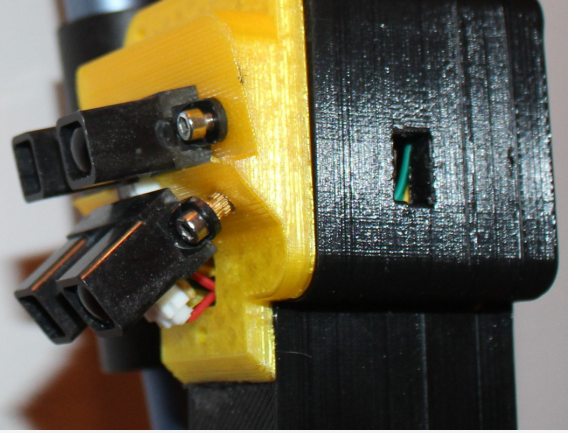


# curbd

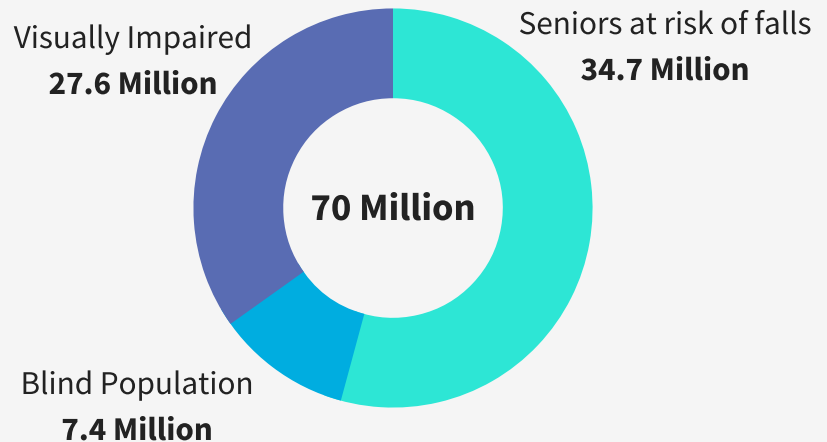
ASSISTIVE DEVICE FOR  
THE VISUALLY IMPAIRED



## PROBLEM

A large problem facing members of the senior and blind population today is curbs, steps, and ditches in their path. These sudden changes in elevation, when not anticipated, can be shocking and jolting to the person and can lead to a trip or fall.

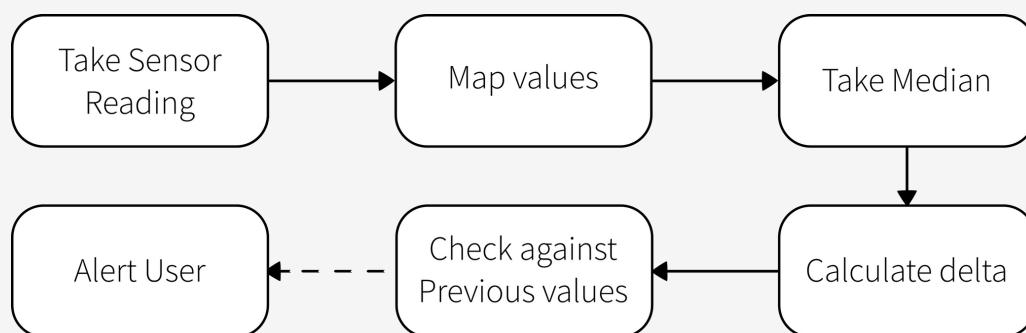
## SCOPE OF PROBLEM



## SOLUTION

- Two **proximity sensors** mounted on the hip or on the cane **detect differences** in elevation
- Designed to work within **half a second** and **alert the user** instantaneously.
- Algorithm is based upon **trigonometric concepts** to determine **step-ups and step-downs**
- Works in **rain or shine**, outdoors or indoors

## ALGORITHM



## MOUNTING SYSTEM



## SIDE PROFILE



## AWARDS

- Top 7 - International AARP OpenIDEO Senior Living Challenge (2017)
- 2nd Place - Regional Science Fair (2017)
- 1st Place - Fairfax County "Shark Tank" Assistive Technology Competition (2016)
- 3rd Place - 3M Discovery Education Young Scientist Challenge (2013)