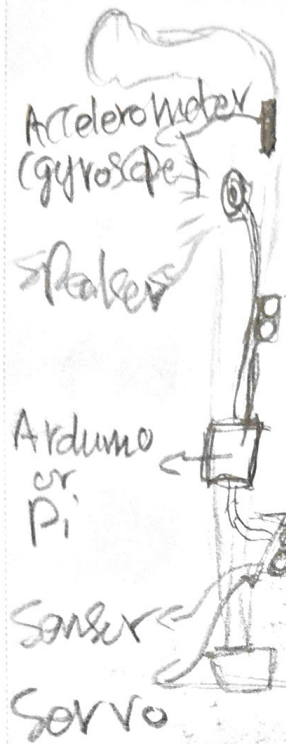# UVA Engineering Project

Description

Smart cane that provides safety against falling danger for elder people or people with disability.

The cane produces sensory cues such as sound alarms or vibrations to alert dangerous conditions

Accelerometer (gyroscope)

Speaker

Arduino or Pi

Sensor

Servo

Features

- Ultrasonic sensor directed on the terrain. It has optimal distance. If the distance is high (hole) or low(obstacle), a speaker beeps to notify the user.
- Three tones: one for holes, one for obstacles. And one for object
- A **PID** controller is established to keep the orientation of the ultrasonic sensor consistant. The servo turns the sensor by using data from the gyroscope.