1. Again for further modification Arjun Pardasani, Sashwata Banerjee and Aditya kamal student of VIT, made a smart glass with a pair of smart shoes using Raspberry pi and other sensors. Where they implemented Braille code for upmost enhancement by letter recognition with optical phenomena and object detection by ultrasonic sensors through the shoes.
2. In another paper for improvised navigation of outdoors and indoor by detecting obstacle at different heights on flat road, the students Srinidhi Srinivasan & Rajesh M. from Amrita School of Engineering, Bengaluru made a smart version of blind stick where leg weakness, balance loss and improper navigation of indoors and outdoors can easily be avoided by Force sensor, Ultrasonic sensor & Pressure Sensor with the help of alarms.
3. Like other smart stick Mrs. S. Divya, M. Praveen Shai, A. Jawahar Akash, Shubham Raj and Ms. V. Nisha have made a smart design with arduino microcontroller, object detecting sensors and GPS with GSM module for object detection and location monitoring to give the blind person a better life.
4. The student of Department of Computer Engineering Maharashtra Institute Of Technology Pune provides an efﬁcient solution for the visually impaired in the form of a hardware automated stick based on Google's Cloud Video Intelligence API. This system uses real time video processing to analyze the obstacles or objects coming in the path of the blind and provides feedback in the form of voice messages. Hence the system facilitates real time navigation in both indoor and outdoor environments easily.
5. In another paper Priyanka Ambawane, Devshree Bharatia, Piyush Rane made a modified e-stick using IOT, face detection technique, Object detection technique with google cloud version API to give a better and easy life to the visually impared person.