

Blind Stick for Visually Impaired People

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Abstract - The main object of this project is to come up with an idea to help blind and visually impaired society people. Using blind stick the blind person can walk independently on his own and stick will assist the person to navigate. People with visual disabilities often depend on external assistance for their help like humans, trained dogs, or some kind of electronic device as their support systems. We accomplished this goal by adding buzzers and ultrasonic sensors which will help the user to overcome this difficulties. The proposed system will guide the user where the object is with the help of ultrasonic sensors. In case of the emergency situation the location of the person is shared to their family members so that they can track them easily.

Key Words: GPS-GSM, Blind Stick, Ultrasonic sensors, Arduino Uno

1. INTRODUCTION

Independence plays the most important role in our lives in achieving our goals, dreams and objectives in our lives. Blind people are people who find it difficult to recognize the things around them difficult with the healthy eyes, so the stick which we have built will help them recognize things easily and make them feel comfortable. Blind or visually impaired person always looks for some kind of helping hand from the other person whenever they go out of the house which make them feel less independent. Blind people goes through a lot of problems while walking on the streets. This system design and develops a stick which will help the blind person navigate easily on the streets and make them more comfortable and independent. Most of the blind guide systems use ultrasound sensors because of the immunity to the environmental noise. The blind stick which we have developed will help visually impaired people roam easily and comfortably without any problem. With the rapid advancement in the technologies both in hardware and software it has become much easier to provide intelligent navigation system for the visually impaired peoples.

2. PROBLEM STATEMENT

For people like us, who are healthy it is very easy to find and reach to its destination but for the blind people it is very difficult to reach the destination they constantly look for someone to help them reach their destination. By this their problem will overcome using Blind Stick.

3. OBJECTIVE

The objective of this project idea is to make blind people lifestyle easier because they face many hinderance in day to day life while travelling or while doing any activity. So this proposed system will help the individual to detect any obstacles as well as sending messages when the individual is in emergency with use of gsm module. Location can also be shared using gps location integrated with the module.

4. PROTOTYPE

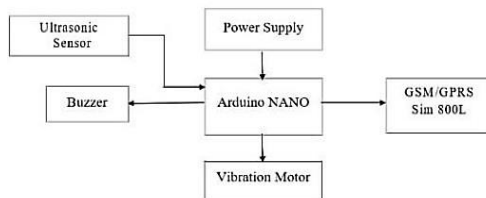
Blind stick is an innovative stick designed for visually disabled people for improved navigation. We here propose an advanced blind stick that allows visually challenged people to navigate with ease using advanced technology. The blind stick is integrated with ultrasonic sensor along with buzzer and gsm module. Our proposed project first uses ultrasonic sensors to detect obstacles ahead using ultrasonic waves. On sensing obstacles the sensor passes this data to the microcontroller. The microcontroller then processes this data and calculates if the obstacle is close enough. If the obstacle is not that close the circuit does nothing. If the obstacle is close the microcontroller sends a signal to sound a buzzer. It also sends emergency message using gsm module to assigned contact numbers. It is embedded as part of a complete device often including hardware and mechanical parts. Embedded systems control many devices in common use today. 98 percent of all microprocessors are manufactured as components of embedded systems. with general-purpose counterparts are low power consumption, small size, rugged operating ranges, and low per-unit cost. This comes at the price of limited processing resources, which make them significantly more difficult to program and to interface with. However, by building intelligence mechanisms on the top of the hardware, taking advantage of possible existing sensors and the existence of a network of embedded units, one can both optimally manage available resources at the unit and network levels as well as provide augmented functionalities, well beyond those available.



5. METHODOLOGY

The working behind blind stick is that it is used for some special purposes like sensing device for blind person. The circuit provides 5V of power supply and maintains its output at the constant level. It is used to detect object using Ultrasonic sensors. If any object is sensed near the person, the ultrasonic sensors will sense it and will send the data to the Arduino.

6. ARCHITECTURE



7. FUTURE SCOPE

The future scope the existing system is that it guides visually impaired people to his desired destination and will ensure full safety to the person. We can also add the camera in the stick which will help the blind person more easily and guide him even more safely. GPS can help to find the best and the shortest possible path accordingly with the help of a Google map. GSM attachment can also help on future for any kind of immediate casualty help.

8. CONCLUSION

This paper presents the implementation of the blind stick that assists a visually impaired person to its destination safely and securely. We use various sensors to detect the obstacles and guide the person accordingly. As the person nears the obstacles, the beep sounds will keep on increasing, warning the person that he might get into danger. We have also used GSM and GPRS modules which help to trace the blind person with the data collected by it.

9. REFERENCES

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