Abstract

This paper deals with the research that led to the development of a robotic guide or a robot which would act as an aid for the aged category of the society. The robot is developed in such a way that it can be controlled and maneuvered by any device that is capable of supporting an android operating system. The user will be able to send the voice instructions using an android application which will be received via the Bluetooth module in the robot's chassis and finally the instructions will be executed. The route map will be fed into the robot in the form of instructions that would follow a certain path and hence would be able to reach the target location detecting and avoiding all the obstacles through the infrared sensors that might be in the way to reach the destination. The project also gives an idea of the bug family algorithm, the PointBug algorithm that has been implemented for local path planning and obstacle detection and avoidance. The entire project is developed in such a way that the various compatibility constraints can be met with a wide variety of smart equipment that includes a smart phone, a tablet or a laptop etc. that holds the capability of supporting an android operating system in its architecture.
Voice Controlled BOEbot using PointBug Algorithm for Human Robot Interaction using Android Technology

- O. Khatib, K. Yokoi, O. Brock, K. Chang, and A. Casal, Robotics Laboratory, Department of Computer Science Stanford University, Stanford, California, Robots in Human Environments, [Available online: www.redaktion.tu-berlin.de, Last Access: October 2014].


- Abdel Ilah Nour Alshbatat, Department of Electrical Engineering, Tafila Technical University, Tafila 66110, Jordan, Automated Mobility and Orientation System for Blind or Partially Sighted People, International Journal On Smart Sensing And Intelligent Systems, Vol. 6, no. 2, ISSN-11885608, April 2013.


- Iwan Ulrich and Johann Borenstein, Member, IEEE, The Guide Cane --Applying Mobile


Index Terms

Computer Science  Automated Systems

Keywords

BOEbot  infrared sensors  QTI sensors  route map  Google Voice to Text API
Speech Recognition
RFID
Bluetooth
PointBug Algorithm