Senior Design Project Report

CSE/EEE/ETE 499

Smart cane for visually impaired people with obstacle, staircase and water detection along with location tracking feature

Submitted By

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Senior Lecturer

ELECTRICAL AND COMPUTER ENGINEERING

NORTH SOUTH UNIVERSITY

Fall 2017

Agreement Form

We take great pleasure in submitting our senior design project report on "Smart cane for visually impaired people with obstacle, staircase and water detection along with location tracking feature ". This report is prepared as a requirement of the Capstone Design Project CSE/EEE/ETE 499A & B which is a two semester long senior design course. This course involves multidisciplinary teams of students who build and test custom designed systems, components or engineering processes. We would like to request you to accept this report as a partial fulfillment of Bachelor of Science degree under Electrical and Computer Engineering Department of North South University.

Declared By:

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Abstract

Around 7.6 million people in Bangladesh are visually impaired and approximately 1.1 million are blind. They are deprived of one of the most essential sense. Our main purpose was to lessen the struggles of our country's visually impaired people. White canes are usually used by has many limitations like detecting objects properly, detecting stairs, head-level objects etc. Moreover, currently available modern systems are costly, thus unaffordable for poor people. Therefore, we are proposing an Arduino based low cost smart cane with multiple sensors which will help a blind person with safe navigation and make him or her more independent. Our final design is quite cheaper than existing alternatives and warns the person via vibratory signals. Our device will be able to detect obstacle, upstairs & downstairs, and presence of water. The device will notify the user by vibration. Our system is also able to provide the location of the user to a particular person in case of emergency. After testing the cane in various situation like educational institution and busy streets we have found it very useful and efficient. There is also a RF remote controller as cane locator for the user to find the device easily.