CSP315 and Beyond: Embedded Systems Design & Innovation Exhibition

Date: Monday, 2nd Dec 2013,
Time: 10:00 AM to 12:30 PM
Venue: Room No. 502, CSE Department, Bharti Building

Preamble: Each year now it is a tradition to publicly showcase projects carried out in CSP315 (Embedded systems design course) through an open exhibition. We continue with that tradition and would like you to take some time out of your busy schedule and visit the laboratory on Monday 2nd Dec. forenoon. One refreshing change you would see this year is that there are many more inter-disciplinary groups; CS, EE and ME students jointly designing and delivering on a project. Though we have a variety of projects on display, but as in recent past, devices for education and mobility of visually impaired continues to be our priority. To make your visit worthwhile, apart from CSP315 projects, we would also be demonstrating a few BTPs as well as assistive technology group devices that have graduated beyond student projects and are in various stages of translational research.

CSP315

1. ***Refreshable Braille Display Controller***: Would you spend Rs. 1.5 lakhs for a 40 character LCD display to read e-text? See prototypes of modular Braille display controllers based on SMAs that can potentially cut down the cost of Braille displays by a factor of 8
2. ***Object Locator:*** Where did you leave your car keys?A Bluetooth mobile based app for tagging and locating misplaced objects
3. ***Braille Tutor:*** Remember all the scrabble you played to improve you word power!A Braille tutor that provides voice as well as Braille I/O for learning Braille. Integrates interesting word games to learn language and improve vocabulary.
4. ***e-SPEAK Module:*** Would you like to carry a device that can speak Tamil next time you travel in interior Tamil Nadu!Embedded implementation of e-Speak for supporting voice output in multiple languages
5. ***Seat Locator:*** Imagine entering a cinema and locating your pre-assigned seats after the lights have been switched off! RFID passive tag based mobile attachment for locating pre-assigned seats in aircrafts, chair cars etc.
6. ***Quick Polling Device:*** Want an immediate feedback on the new mess menu? See in operation a quick-polling device.
7. ***Cleaning Contract Monitoring:*** All our services are being outsourced. Are we satisfied with the performance of the contractor? An innovative technology based solution for transparent monitoring of garbage bin cleaning.
8. ***FPGA based Video Processing:*** Demonstration of Embedded video/image processing based on FPGAs

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9. ***SoS Device:***Next time in trouble with the goons, send an SoS to the loved ones and the police! See the concept demo of a personal safety device
10. ***VIP Device:***Waited impatiently in offices and company receptions for the gate pass? See a device for quick generation of gate passes
11. ***Smartcane:***Do you realize many obstructions on the walkways like jutting air-conditioners, tree branches etc. are real hazard for the visually impaired and result in upper body injuries. See and test the Knee above obstacle detection device that is as of today being used by 100+ visually impaired users in 5 cities. Expected to be commercially available in early 2014
12. ***OnBoard:*** May have seen lately on IIT Buses. An aid for visually impaired to board public buses. Pilot scale testing on Delhi public buses expected to start in early 2014
13. ***TacRead:***Even today digital world is accessible to the visually impaired in India only thru voice. SMA based refreshable Braille cells that have the potential to bring digital content thru active reading to the visually impaired in the developing world.
14. ***Roshni:*** Do you get lost in corridors looking for offices. Try next time with your eyes blinded. An indoor navigation aid for the visually impaired.
15. ***NVDA Partnership:*** NVDA is a popular open source screen reader software. We have started contributions to the community
16. ***CAD for Tactile Graphics:*** Science education is virtually inaccessible to millions of blind students in India. Primary limitation being access to figures in the text books. An effort to interactively generate tactile graphics.
17. ***3D Tactile Moulds:*** Using the latest 3D printing technology for making tactile graphic moulds

Please come and give your valuable suggestions and encourage the students.

Remember

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From the ASSISTECH Group, IIT Delhi

Motto

To touch a million lives thru assistive technology