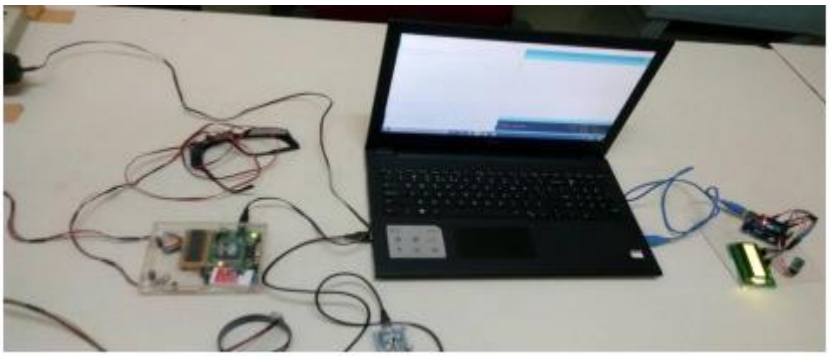
CHILDREN'S EDUCATION SOCIETY (Regd.)
THE OXFORD COLLEGE OF ENGINEERING
(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.
Approved by A.I.C.T.E. New Delhi.
Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602, Fax: 080 - 25730551
E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Students Projects for Differently-abled persons

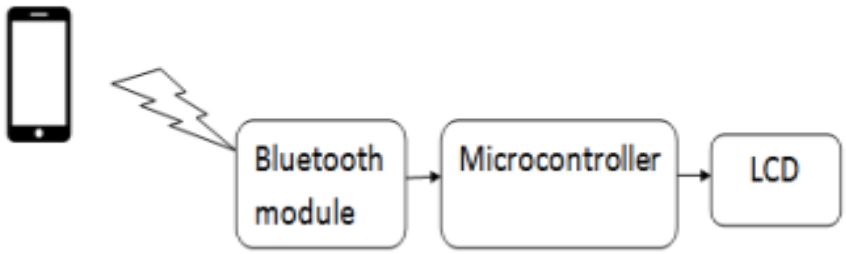
PRINCIPAL
The Oxford College of Engineering
Bommanahalli, Hosur Road
Bangalore-560 068

1. A Smart Wrist Band based human Interface for PWD (Person with Disability)

This technology is intended to be used by disabled people who face a lot of problems in communicating with fellow human beings. It will help them use their voluntary movements, like eyes and hand movements: to control computers and communicate through customized software/ hardware. People with severe disabilities can also benefit from computer access and take part in recreational activities, use internet or play games. The proposed algorithm tracks the motion accurately to control the cursor, thus providing an alternative to computer mouse

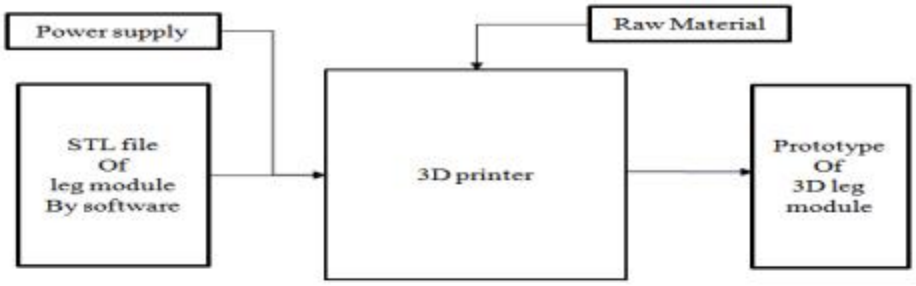


Android Voice to Text App:



2. Prosthetic Leg

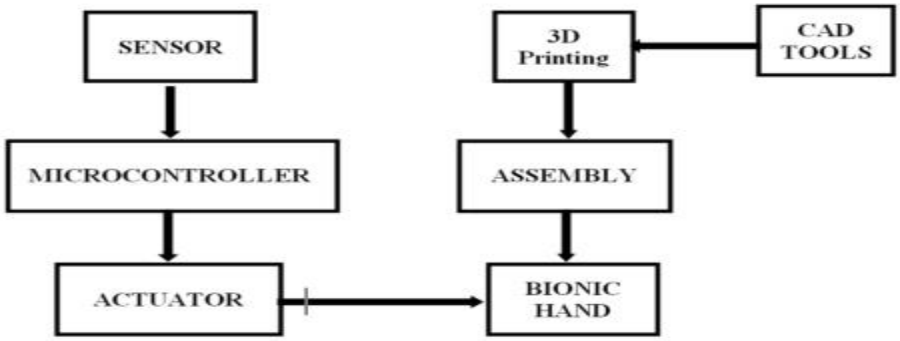
This article concerns the design of lower limb prosthesis, below the knee. It describes a new computer-based design framework and a digital model of the patient around which the prosthesis is designed and tested in a completely virtual environment. 3D printing has been hailed as a disruptive technology which will change manufacturing. The virtual model of the patient is the backbone of the whole system, and it is based on a biomechanical general purpose model customized with the patient's characteristics



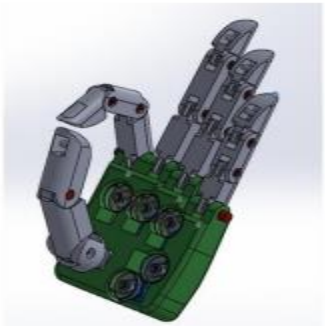
3. Wearable Bionic Hand For Amputees For Basic Needs

We designed an arm with an opposable thumb which improves the functionality of the arm. We included slots in the design where servo motors could be placed so as to make it portable and less bulky. We have used 9V servo motors. The control system consists of EMG sensors that read electrical pulses. We then interface it with Arduino Uno microcontroller. Different types of biosensors available to detect EMG signals and convert them electrical signals were discussed and at last surface electrode EMG sensors were decided to be used.

Block diagram of proposed design

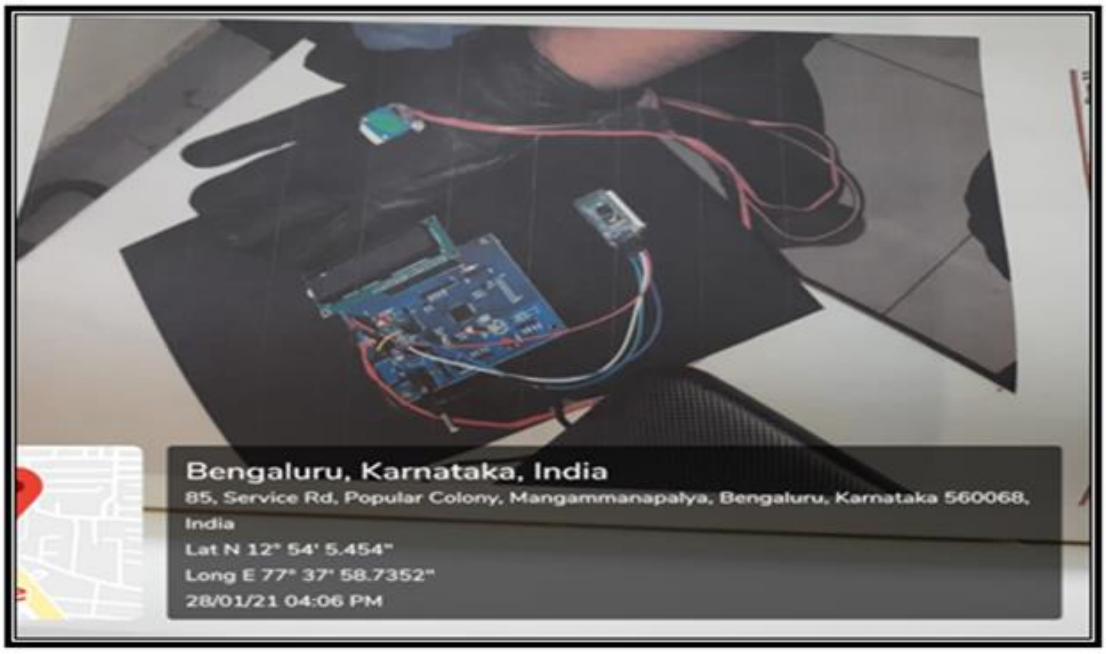


RESULTS AND CONCLUSION



4. A Gesture based model to assist handicap in search of jobs.

Software used is Cubesuite+,Renesas flash programmer, JDK, Android SDK, Eclipse IDE



5. A product with a wireless mouse for person with disability

This is a patent prototype developed for ICMR

6. 3 D Printed Bionic Hand Developed for the disabled

The root of the system is an innovative mechanical design for a 3D printed robotic hand which allows for sophisticated movement.

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