Socially Relevant Projects

Dadi Institute of Engineering & Technology has been in the forefront in developing technologies to solve pressing problems of the society. Department of Computer Science Engineering aims to sufficiently organize and disseminate information about these projects within student and faculty community.

Projects at **Socially relevant projects (SRP),** Computer Science Engineering department support sizable number of such projects.

PROJECT REPORT

ON

TRICYCLE FOR PHYSICALLY CHALLENGED

Submitted By

ADARI RAVI SHANKAR
Reg – No : 19U41A0501

ALA VENKATA SOUMYA
Reg – No : 19U41A0502

ANNAPUREDDY SAMARA SIMHA REDDY
Reg – No : 19U41A0503

PETRUM HARSHA VARDHAN
Reg – No : 19U41A0504

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Dr.Prasanna Kumar, HoD, CSE

TRICYCLE FOR PHYSICALLY CHALLENGED

Problem Definition

The product is a mobility device for outdoor usage meant for mobility challenged and economically disadvantaged people. The existing tricycles in use in India lack in many essential features concerning safety and comfort and have following issues:

1. Ride on harsh roads is uncomfortable and unsafe.
2. Climbing in and out is difficult.
3. Sitting posture is uncomfortable.

Solution

Following features are provided to address issues in existing design:

1. Fitting rear wheels with independent suspensions/shock-absorbers.
2. 'Open able' arm-rest to facilitate easy climbing in and out.
3. Independently adjustable foot-rests for suitable positioning of feet and therefore offering suitable sitting posture.
4. Seat-belts for enhancing safety.
5. Parking-brakes attachment to keep the tricycle stationary while climbing in and out.
6. Perforated seats for increased ventilation and air-circulation.

Uniqueness

1. Independent rear suspensions/shock-absorbers.
2. Open able arm-rest.
3. Independently adjustable foot-rests.
4. Parking brakes.

Sample Images

PROJECT REPORT

ON

Stirling Engine

Submitted By

BODDEDA REECHA
Reg- No: 19U41A0506

CHANDANA DURGA PRASAD
Reg- No: 19U41A05067

CHATTI LAKSHMI PRIYANKA
Reg- No: 19U41A0508

CHAVA SAI RESHMA
Reg- No: 19U41A0509

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Dr.K.Sujatha

Stirling Engine

Problem Definition

The lack of electricity in rural areas and the abundance of biomass.

Solution

The product focuses on utilizing the energy content in the biomass developed in agricultural fields by using them to power an external combustion engine, without going through the trouble of converting them to biogas. The Stirling engine (External combustion) converts the energy into electrical energy through an alternator.

Uniqueness

Small scale engines suitable for household ownership with a very simple design which means easy maintenance and hence the small price makes the product very suitable for rural household needs. Special importance has been given to make a very economical product rather than making it more and more efficient, because a very efficient but costly alternative will not sell in the existing conditions.

PROJECT REPORT

ON

A PORTABLE CABLE WAY FOR POST HARVEST RESOURCE COLLECTION

Submitted By

CHINTALAPUDI VARAHA VENKATA ADITYALAHAR
Reg No: 19U41A0510

DABBIRU SAI KIRAN
Reg No: 19U41A0511

DADI BALASREE BHARGAVI
Reg No: 19U41A0512

DADI ROSHINI
Reg No: 19U41A0513

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

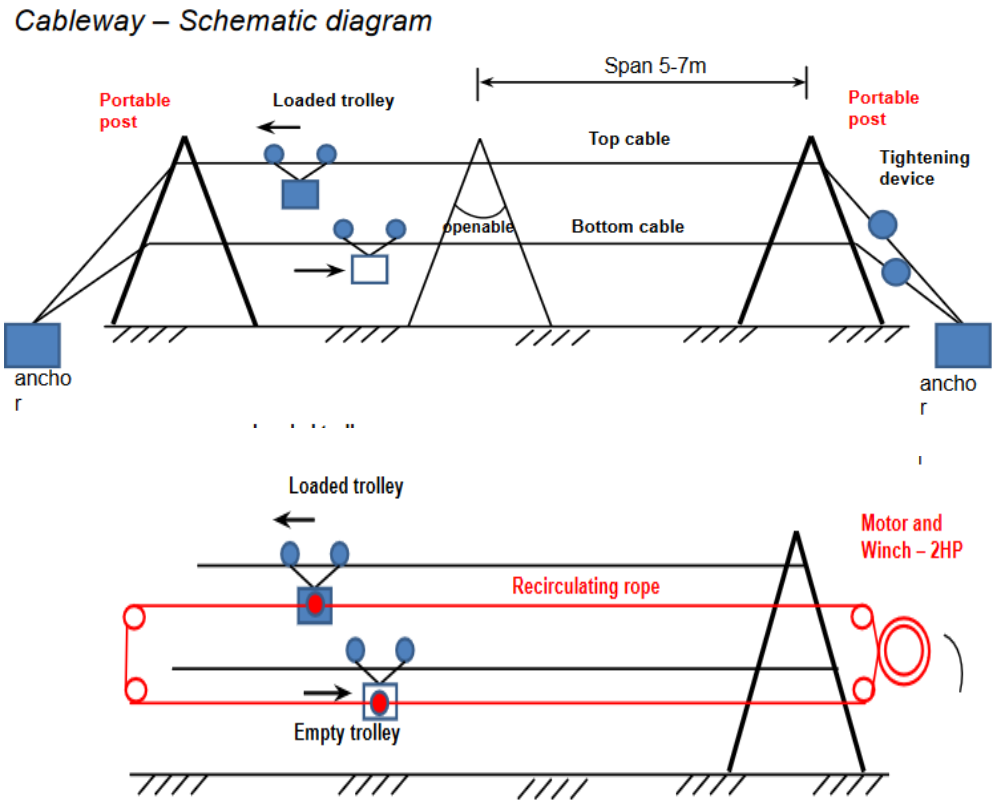
Mr.A.Venkateswara Rao

A PORTABLE CABLE WAY FOR POST HARVEST RESOURCE COLLECTION

India is one of the largest sugar producers in the world. It is produced from sugarcane. Sugar can be produced from various crops: sugarcane, sugar beet, palm jaggery etc. The immediate reason for this project is the problems faced by Sugarcane Farmers in Visakhapatnam District of Andhra Pradesh . It is typical of other farmers also.The following points are facing the farmers of Andhra Pradesh

1. There is a significant shortage of labour in the Indian farming sector.
2. All sorts of agricultural activities are thus affected.
3. Especially affected is post harvest resource collection (most labour intensive).
4. Due to small size of Indian farms (Land Ceiling Act) western type of large-scale mechanisation is not possible.
5. Wetland fields (surrounded by ditches, canals) make vehicle entry difficult into some farms.
6. Damages of fruit like bananas during manual transportation. Cable way is a preferred option here.

A simple, economical, compact portable cableway has been developed, fabricated and tested for transportation of any produce loads from farm to collection point.



PROJECT REPORT

ON

Assistive Technology to the Needy People

Submitted By

DADI THANUSHA
Reg-No: 19U41A0514

DONKA GANGA BHAVANI
Reg-No: 19U41A0515

DUKKA RAJSEKHAR REDDY
Reg-No: 19U41A0516

GAMINI NIVAS
Reg-No: 19U41A0517

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Mr.P.Rama Raju

Assistive Technology to the Needy People

Assistive Listening Systems:

A variety of assistive listening systems, or hearing assistive technology, can help students who are deaf or hard of hearing, as well as those with other auditory and learning problems. According to the National Association for the Deaf, assistive listening systems can be used to enhance the reach and effectiveness of hearing aids and cochlear implants, or by children who do not need those tools but still need help hearing. Assistive listening systems use a microphone, a type of transmission technology and a device for capturing and bringing the sound to the ear. The specific transmission technology used in the system is typically what contrasts one type of assistive listening system from another.

Text to Speech:

As an assistive technology, text-to-speech (TTS) software is designed to help children who have difficulties reading standard print. Common print disabilities can include blindness, dyslexia or any type of visual impairment, learning disability or other physical condition that impedes the ability to read. However, other students can benefit from TTS technology, such as children that have autism, attention deficit hyperactivity disorder (ADHD) or an intellectual disability.

The technology works by scanning and then reading the words to the student in a synthesized voice, using a large number of speech sounds that make up words in any given context. With the advances in speech synthesis, TTS technology is more accurate and lifelike than ever.

Intel Reader:

The Intel Reader is a mobile handheld device that uses TTS technology to read printed text aloud. It features a high-resolution camera that captures printed text, converts it to digital text and reads it to the user. During playback, words are highlighted as they are read aloud, and the user can pause and have the device spell out highlighted words. The available Intel Portable Capture Station functions as a stand for the Intel Reader to easily and quickly capture text from books and other documents.

At about the size and weight of a paperback book, the Intel Reader is mobile enough to use in any environment. Students can also transfer content from a home computer, or save generated audio versions of printed materials to a computer. Available voices vary in gender, pitch and speed.

FM systems:

According to American speech language hearing association (ASHA), FM systems are the best choice for children with sensor neural hearing loss. The most common type of hearing loss for all ages, sensor neural hearing loss occurs when the inner ear (cochlea) or nerve pathways from the inner ear to the brain are damaged.

FM systems work using radio broadcast technology. With a transmitter microphone and a receiver, the teacher and student can maintain a consistent sound level regardless of distance and background noise. Additionally, ASHA notes that the hearing aid microphone can be turned off, so the student can concentrate on the teacher alone.

Sip-and-Puff Systems:

Sip-and-puff systems are used by students who have mobility challenges, such as paralysis and fine motor skill disabilities. These systems allow for control of a computer, mobile device or some other technological application by the child moving the device with his or her mouth. Similar to a joystick, the child can move the controller in any direction and click on various navigational tools using either a sip or a puff. An on-screen keyboard allows the child to type using the same movements.

Sip-and-puff systems are a type of switch device, which refers to the technology used to replace a computer keyboard or mouse. Other switch devices include buttons or other objects that a student can touch, push, pull, kick or perform some other simple action that can then control the device.

PROJECT REPORT

ON

Waste Management Technologies

Submitted By

GATTEM YUKTHA MUKHI
Reg No: 19U41A0518

GEDELA BHAVANA RESHMA
Reg No: 19U41A0519

GONNABATHULA PAVAN SAI
Reg No: 19U41A0520

GUDIPATI SRILASYA
Reg No: 19U41A0521

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Mr.CH.Dinesh

Waste Management Technologies

Waste-to-Energy

Generating actual power from waste is one of the major innovations in the waste management industry. This technique aims to convert waste into energy in place of the accumulation of waste in the landfills. Digesters produce the biogas from different sorts of waste such as food, agriculture, etc. and transform that into the energy utilized on-site.

Within the waste-to-energy innovation concept, it is super important to mention thermal energy conversion. Broadly speaking, this technology is based on the change in heat and pressure and works well to turn waste into chemicals, fertilizers, oils, etc. Aside from that, the microturbines, burning waste gas to create power and heat, already became a substitute for traditional methods for landfill processes.

Software for Waste Management Companies

Today, a great number of prominent firms reap the benefits of SaaS (Software-as-a-Service) offering advanced digitized platforms for the most efficient waste management process. These platforms refer to facilitating solutions to cope with industrial challenges and amplify the performance.

Though several solutions are provided by **waste management software**, the most crucial ones are as follows:

- Central management & control
- Operational efficiency & improved service quality
- Immediate intervention capability through real-time alerts
- Increased employee productivity
- Increased customer and citizen satisfaction

Robot Recyclers

While talking about innovation, we cannot skip the robotic technology that has become the top trend in the last decades. After the import of recycling waste products was restricted by China in 2018, western companies expedited their innovative steps to integrate robotic technology in a better processing capability. Furthermore, researchers in numerous companies and universities highlight a more than $6 billion environmental service gap in the recycling industry and indicate robotic technology is a potential solution to fill this gap. All these institutions strive to develop more AI-enabled robotics that can assist in controlling quality, sorting recyclables, and minimizing the health risks to human work teams.

Currently, several companies produce robotic solutions for recycling efforts. As stated by the producer firms, the investments are mainly focused on improving the quality of shipped secondary commodities and reducing labor costs on the sorting line.

Internet of Things (IoT)

The leverage of the Internet of Things (IoT) and cloud computing technology provide high-tech sensors and enable waste management companies to optimize hauling routes and timing data. Throughout the process, haulers identify where full waste containers are located and when should they be collected. This technology lets customers collect waste from full containers. In fact, IoT aims to boost efficiency and save money by reducing unnecessary pickups.

The GPS monitoring system is a great innovation as well as sensors. As data is the key in today's world, waste companies utilize the computer algorithms collecting information associated with the most efficient routes based on the distance and traffic patterns. All areas including residential routes, industrial waste pickup, construction containers, and smart bins can seize the opportunity of merging with such an innovative tool.

Waste-to-Raw Material

The search to reuse waste in a productive manner and innovations in that regard have been markedly increasing. Companies turn waste products into a source of raw material by extracting plastics and cellulose fiber. Autoclave sterilization technology is essential within this operation. Autoclaves are used as heat treatment processing units to destroy microorganisms before disposal.

Self-Driving Trucks

Despite the fact that it's still in the development phase, autonomous waste pickup is close to being implemented. As known, Volvo has been working on this technology for 3 years. Uber became its partner and participated in the research and development process. This system targets a truck maneuvering itself whilst the operator gets out for collecting the garbage. Gear changing, steering, and speed are also optimized for low fuel consumption and emissions.

"Our self-driving refuse truck is leading the way in this field globally, and one of several exciting autonomous innovations we are working with right now" explains Lars Stenqvist, Chief Technology Officer, Volvo Group. Additionally, Stenqvist states this new technology provides benefits for a reduction in the risk of occupational injuries.

Robotic Trash Cans

Robotic wheeled trash containers that roll out on their own at the push of a button are an example of the greatest innovations. This innovation is especially helpful for those with limited mobility and motor skills.

Another invention in this category is motorized garbage bins with wheels which take themselves to the curb. They were programmed to travel from a docking station at a person's residence to a second docking station at the curb. The innovators also add a function in this invention to be scheduled for the time and day of the neighborhood's trash pickup.

PROJECT REPORT

ON

Navigator Based on Pedestrian Tracking and GPS for Visually Impaired People (iOS Application)

Submitted By

GUTTHIKONDA LOKESH
Reg No: 19U41A0522

JAYANTHI SAI BHARGAVI
Reg No: 19U41A0523

JYOTHULA PREETHI PRASUNA
Reg No: 19U41A0524

KADIMI LIKHITHA SAI
Reg No: 19U41A0525

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

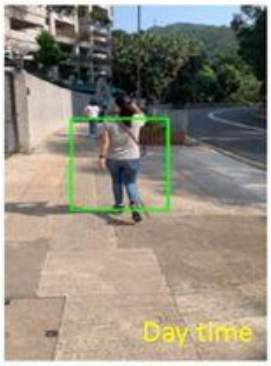
Mr.Y.Dinesh Kumar

Navigator Based on Pedestrian Tracking and GPS for Visually Impaired People (iOS Application)

Purpose: Navigator Based on Pedestrian Tracking and GPS for Visually Impaired People (iOS Application)" ("The Navigator") aims to offer a reliable guiding assistance for visually impaired people. Currently, visually impaired people always need guiding tools like tactile sticks or guide dogs when navigating outdoor. However, the number of guide dogs is limited and the tactile stick cannot provide accurate and informative feedback to the users. As technology advances, smart devices with AI technology can be combined and act as a new generation of guiding devices.

Method: The Navigator will use user's GPS location to plan a route from user's location to the destination, then the Navigator start uses the camera on the mobile device and an object tracking AI model to guide the user to follow pedestrian who is heading to the same destination. Whenever the pedestrian being followed is found not sharing the same destination as the user does, the Navigator will choose another pedestrian. Furthermore, the main feedback medium for guiding the users' direction is haptic. Sound is only used when sending complicated or dangerous messages to the user.

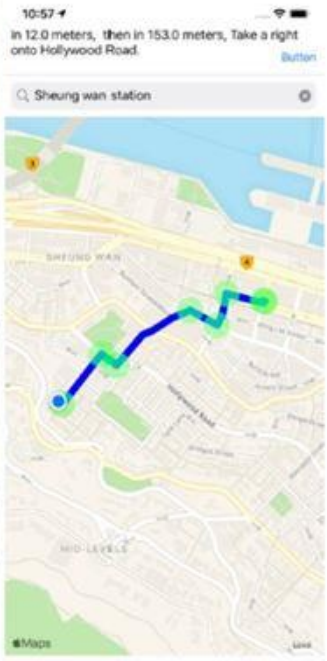
Result: The Navigator is able plan a route from user's location to destination, follow a pedestrian ahead of user and provide appropriate feedbacks to the user. Significance The Navigator integrated with advanced software technologies and a single hardware, the smart mobile device, can potentially provide a low cost temporary replacement for visually impaired people while they are waiting for their own guide dog. Therefore the Navigator may help visually impaired people utilize social resources and services more efficiently during their waiting time, hence better the inclusion of visually impaired people to our society.


Day time


Night time


Sunny day


Rainy day


10:57
In 12.0 meters, then in 153.0 meters, Take a right onto Hollywood Road.
Button
Sheung wan station
Maps

PROJECT REPORT

ON

Localization in the MTR for the Visually Impaired

Submitted By

KALAGA PRIYA
Reg-No: 19U41A0526

KALLLA SHYAM KUMAR
Reg-No: 19U41A0527

KANDIKUPPA ANJANA LOKESH
Reg-No: 19U41A0528

KANDREGULA YOGITHA
Reg-No: 19U41A0529

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Mrs.K.Komali

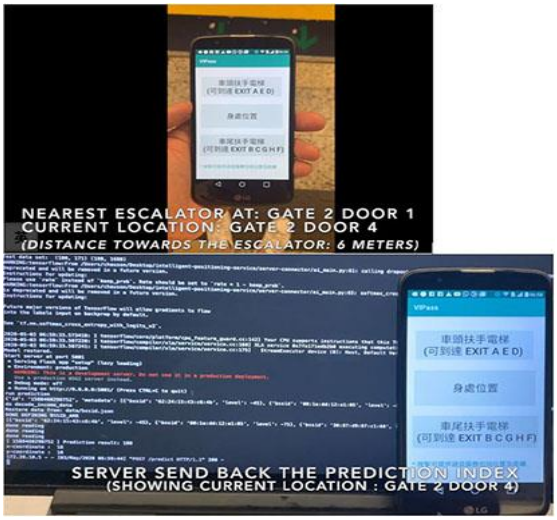
Localization in the MTR for the Visually Impaired

Project Description:

In MTR station, some aids are provided for visually impaired people (VIP) to navigate there. However, it may not fulfill all the needs for the VIP because of the complicated structure of the stations.

Considering this problem, we propose to use deep neural networks to train a model by Wi-Fi signals and develop an android app to help VIP locate their position and the facilities at the MTR platform. Several functions such as distance between the nearest elevator and user position would be provided in the apps with voice feedback.

Software / Hardware Available:
Android Application



PROJECT REPORT

ON

An App to help the Visually Impaired People to Read Music Sheets

Submitted By

KANISETTI MEGHANA
Reg-No: 19U41A0530

KARANAM SOMESWARI
Reg-No: 19U41A0531

KARANAM VISHAL
Reg-No: 19U41A0532

KARRI DIVYA
Reg-No: 19U41A0533

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

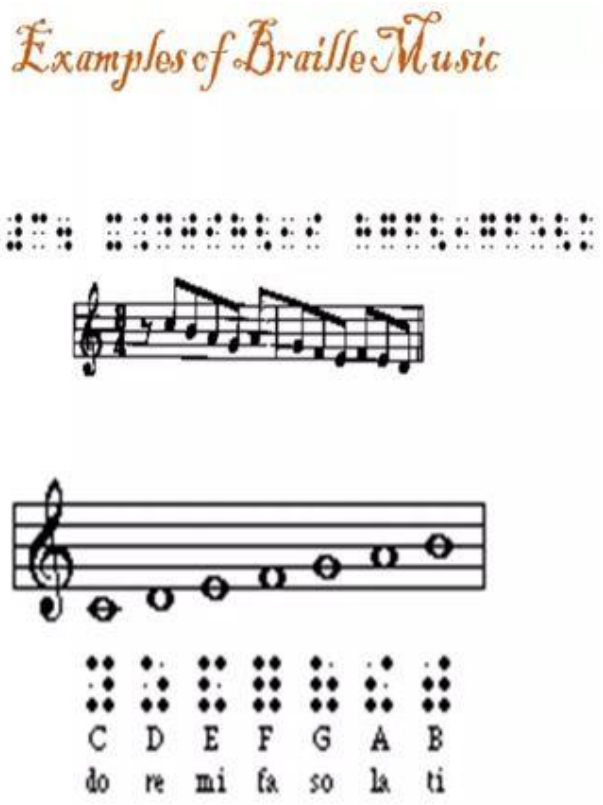
Mrs.T.Sujatha

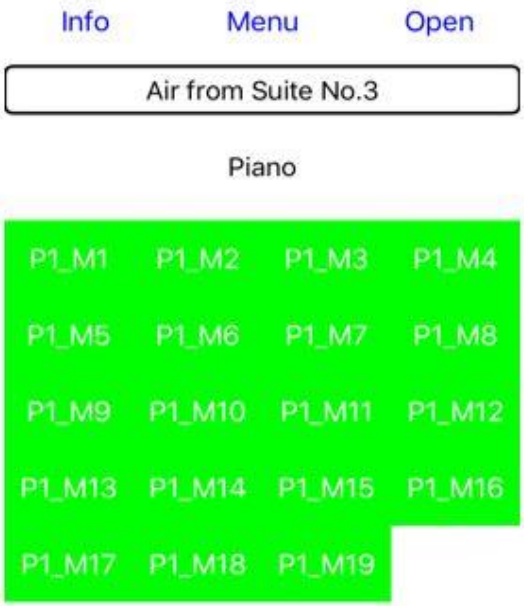
An App to help the Visually Impaired People to Read Music Sheets

Project Description:

This project aims to design an iOS App to help the Visually Impaired People (VIP) to read music sheets. At present, the VIPs need to convert music sheets to braille before they could read them which is very inconvenience and expensive. Through this application, the VIPs can read music sheets via VoiceOver, an inherent accessibility on iOS, when they touch the screen, as if they are reading paper music sheets in braille format.

Software / Hardware Available:
Prototype of an App





PROJECT REPORT

ON

Real-time Outdoor Objects Recognition and Distance Detection for Visually Impaired People

Submitted By

KARRI VARUN KUMAR
Reg-No: 19U41A0534

KATTAMURI SATYAVATHI
Reg-No: 19U41A0535

KATTAMURI VSN SAILAJA
Reg-No: 19U41A0536

KOLLI SATISH
Reg-No: 19U41A0537

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Mrs.A.Kamala Priya

Real-time Outdoor Objects Recognition and Distance Detection for Visually Impaired People

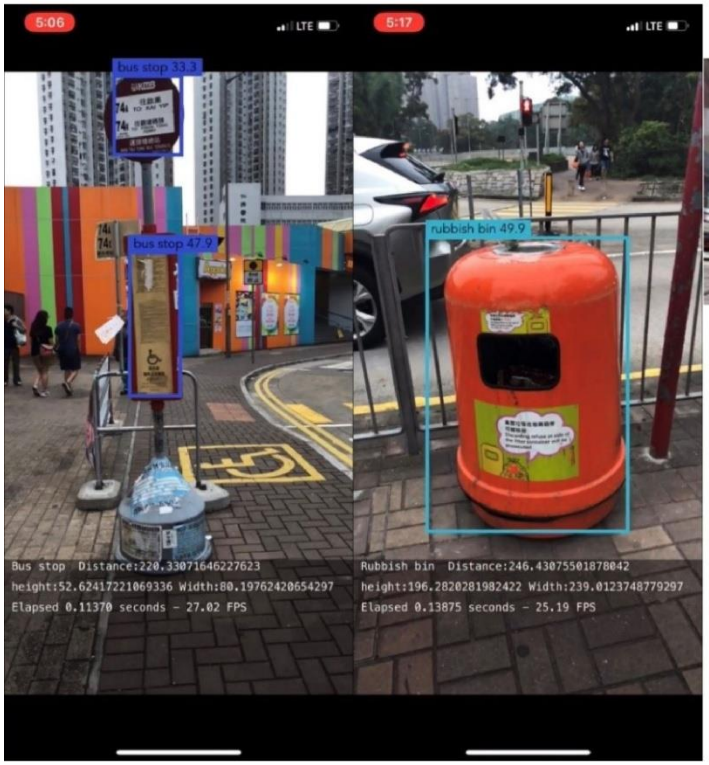
Project Description:

According to the World Health Organization, there are 257 millions of people with visual disabilities. Among them, 217 million have moderate to severe vision impairment and 36 million are totally blind. According to another study, low mobility is one of the major daily life problem encountered by the visually impaired. Walking on unfamiliar roads can be challenging and possibly dangerous for them. Currently, there are existing applications designed for helping the visually impaired. For example, Microsoft has employed image recognition technology in their Seeing AI application to identify different scenes, colors and emotions.

Another application, TapTapSee, describe objects in a photo or short video from user's smart phone camera. The application uses "Cloud Sight Image Recognition API" in the pre-processing stage hence the images are able to return correct description even if the picture was taken under narrowed angles or poor lighting conditions. However, majority of the existing application on smart phone are not designed for identifying outdoor objects, and their processing speed are quite slow due to the high latency of cloud computing, combined with issues such as lacking distance detection. The existing applications fail to provide timely notifications regarding the objects surrounding the individual.

The objective of this project is to develop an offline smart phone application that performs real-time object recognition and distance detection on common outdoor objects. The application aims to create a low cost and real time application to minimize stress and the risk for visually impaired people when walking around unfamiliar locations.

Technology Available:
IOS Application "SeePath"


5:06
LTE
bus stop 33.3
bus stop 47.9
Bus stop Distance:220.33071646227623
height:52.62417221069336 Width:80.19762420654297
Elapsed 0.11370 seconds - 27.02 FPS
5:17
LTE
rubbish bin 49.9
Rubbish bin Distance:246.43075501878042
height:196.2820281982422 Width:239.0123748779297
Elapsed 0.13875 seconds - 25.19 FPS


16

PROJECT REPORT

ON

BAMBOO CYCLE

Submitted By

KOGANTI JAI VENKATA PRAKASH
Reg-No: 19U41A0538

KOLASANI LOKESH
Reg-No: 19U41A0539

KOLLI VENNELA
Reg-No: 19U41A0540

KONA PRASANTH
Reg-No: 19U41A0541

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Mrs.V.Manasa

BAMBOO CYCLE

Problem Definition

Bicycles offer a healthy, eco-friendly and affordable means of transportation. Although they are much cheaper than other vehicles, their cost is still prohibitive for most people in developing countries.

Uniqueness

Bamboo bicycles are available in a few countries, most notably, the USA. This product represents one of the few attempts in India. Besides being eco-friendly and affordable, bicycles made of bamboo offer excellent ride.

Solution

Making the frames out of bamboo, a fast-growing, sustainable and ubiquitous materal could reduce the cost of the bicycles.

PROJECT REPORT

ON

Page Flipper

Submitted By

KONATHALA JASWANTH ADITYA
Reg-No: 19U41A0542

KONATHALA LOHITHA
Reg-No: 19U41A0543

KONATHALA MOWNIKA
Reg-No: 19U41A0544

KOPPAKA SRI GANESH
Reg-No: 19U41A0545

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Dr.M.Srinivas

Page Flipper

Problem Definition

This device has primarily been aimed at the differently-abled section of the society who require help of others to flip pages of books every time they read. This enables them to get a feeling of reading from a book like any other person as opposed to alternate methods like

- Getting assistance from parents/care taker or hire personnel to turn pages
- e-book reading

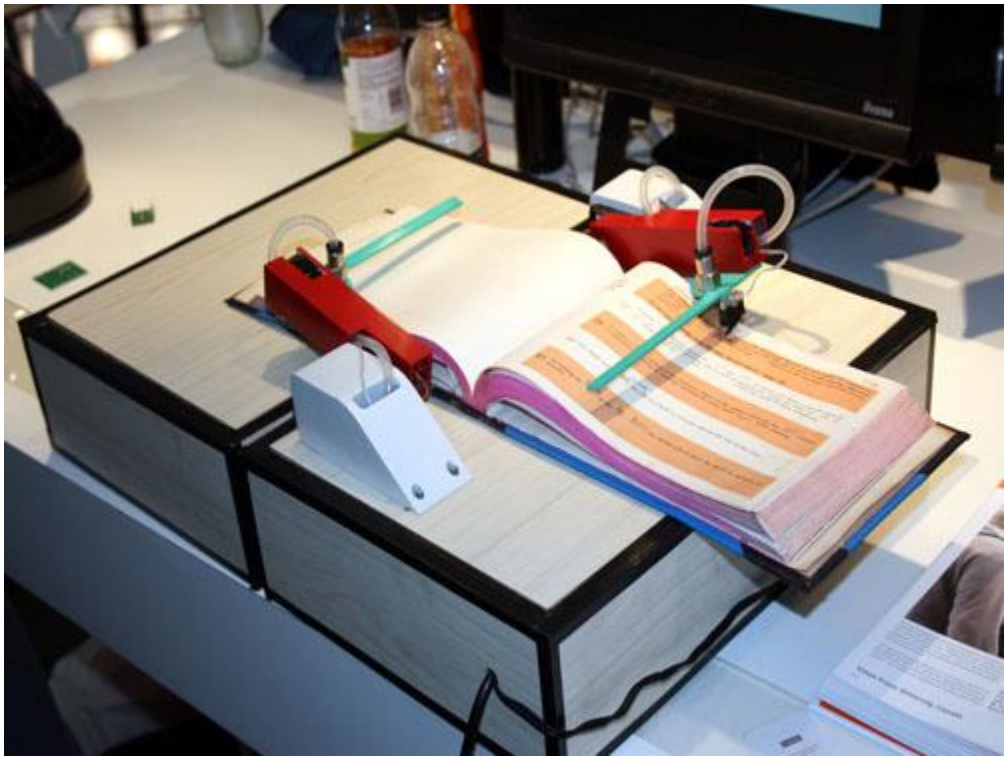
Solution

The Page Flipper is a simple, economical and effective device that can flip pages of any book, one at a time, in both directions and without the use of hands.

It has been designed to help flip pages of any book, one at a time in both directions without the use of hands. It works with books of any paper quality or size and once preset, it can be activated either using a pair of foot switches or voice recognition(This version is yet to be released).

Uniqueness

This product is quite economical as the solutions available in the market are very expensive and not affordable to the common man. One version of this product would help the musicians flip pages of their notes while they play their instrument. This product can also be used for automatically turning and scanning pages of old literature in libraries and for the benefit of patients in hospitals.



PROJECT REPORT

ON

E-PLASTIC MANAGEMENT SYSTEM

Submitted By

KOTTAPU BHANU PRAKASH
Reg-No: 19U41A0546

KURMADASU SUPRIYA
Reg-No: 19U41A0547

MADAGALA NAVEEN
Reg-No: 19U41A0548

MALLA YOGITHA
Reg-No: 19U41A0549

For the Degree of

Bachelor of Technology
Computer Science Engineering

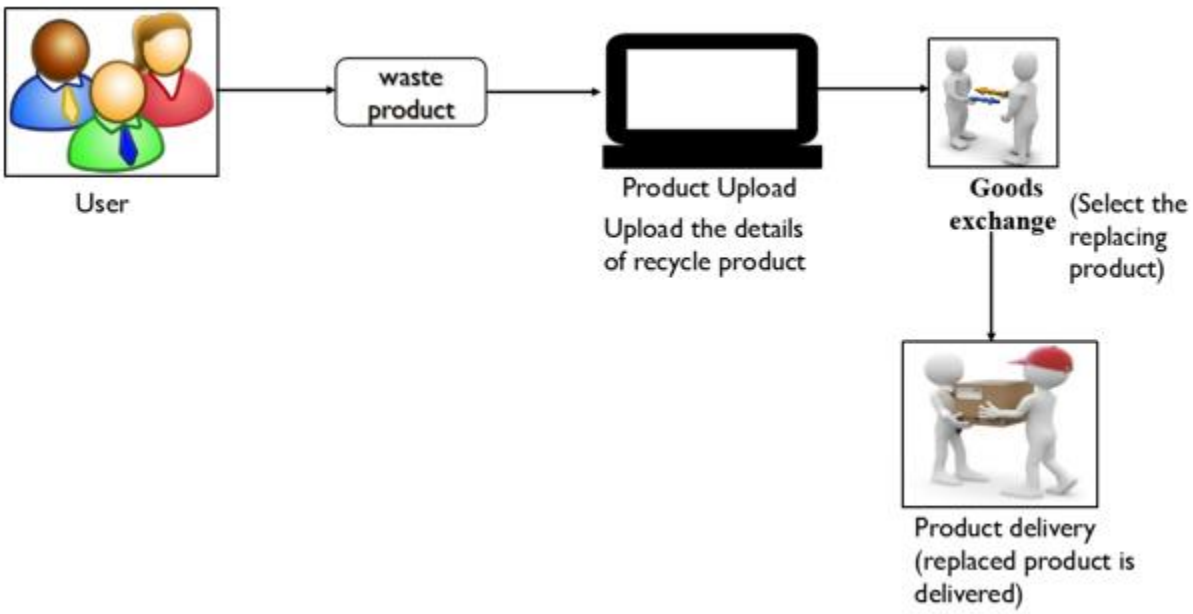
Under the Guidance of

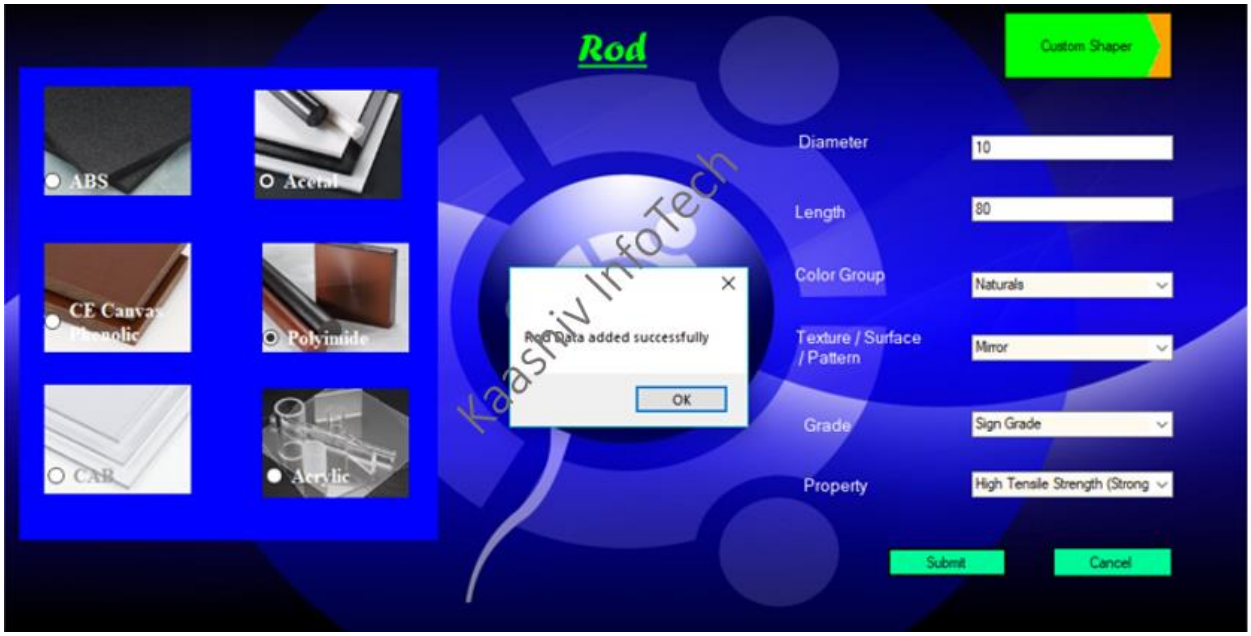
Mrs.V.V.Kalyani

E-PLASTIC MANAGEMENT SYSTEM

E-Plastic management system is an website project in the project we are used to recycle the waste plastic. It is very helpful in order to overcome the wastage issues of the plastics. The user can able to view the list of plastic categories based on their shapes they can choose any of it. The admin used to maintain all the records. Admin also can view the users details add details of product and can also able to update the changes in the details.The management and recycling of E plastic waste is rapidly growing as it is a valuable resource of industries and it is very substances and with low recycling rate. The Utilization of e plastic waste materials is a partial solution to environmental and ecological problems. As the use of E plastic waste will reduces the Aggregate cost and provides a good strength for the structures and roads. It will reduces the landfill cost and it is energy saving. The e plastic waste consists of discarded plastic waste; these plastics are non-biodegradable components of E plastic waste as a partial replacement of the coarse or fine aggregates.

ARCHITECTURE DIAGRAM




Rod
Custom Shaper
ABS
Acetal
CE Canvas Phenolic
Polyimide
CAB
Acrylic
Diameter
10
Length
80
Color Group
Naturals
Texture / Surface / Pattern
Mirror
Grade
Sign Grade
Property
High Tensile Strength (Strong
Submit
Cancel
Rod Data added successfully
OK
Kaashiv InfoTech

PROJECT REPORT

ON

CROP MANAGEMENT SYSTEM

Submitted By

MARADAPA BHARGAVI
Reg-No: 19U41A0550

MOHAMMED ADIL RAZA QUADRI
Reg-No: 19U41A0551

VISWANADHAPALLI SHALEM
Reg-No: 19U41A0552

MUDDA SAI CHANDRA
Reg-No: 19U41A0553

For the Degree of

Bachelor of Technology
Computer Science Engineering

Under the Guidance of

Mrs.G.Sujatha

CROP MANAGEMENT SYSTEM

The crop is basic reason of production of food and raw material, which eventually is reason of survival of the population. In Indian most of the population is dependent on crops. However, there is also need to review and revitalize the mechanism for updating the technology. In the upcoming years agriculture will see major changes. The main purpose for such project is to develop a mobile phone-based solution that helps in crop management, leads to agricultural yield improvement and helps in care/maintenance of the crops. The large amount of crop is getting damage in the field due to the bacterial attacks and lack of information resources. Annually, such loss exceeds 40% in total. So, the project presented here suggest various ways in which a farmer can utilize on their handsets using application called “crop management system”, to assist them for relatively better cultivation and merchandise. Our proposed crop management system application will provide the details about customer and farmer and also it avoids the third party buyer problem which cause problem for farmers. This project used to search for fertilizer and cultivate crop. This helps to update the fertilizer and crop and cultivate. And shows the result of the crop cultivated.