VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

(Sponsored by Siddhartha Academy of General & Technical Education)

Approved by AICTE   I   Affiliated to JNTUK Kakinada

Accredited by NAAC with 'A+' Grade   I   An ISO 9001:2015 Certified Institution

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About **CSE** Department

The Department of Computer Science and Engineering was established in the year 1985 with its cohesive team of faculty members, offers a sound program at the UG as well as the PG levels. The curriculum is a blend of the conventional and the radical. It is updated regularly to keep up with the growing demands and the changing trends of the software industry and research laboratories. Also Department has a thriving research environment with active research groups in the areas of Bioinformatics, Data and Web Mining, Information and System Security, Computer Networks, Digital Image Processing and Video Analytics.
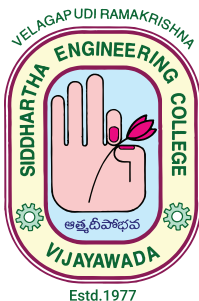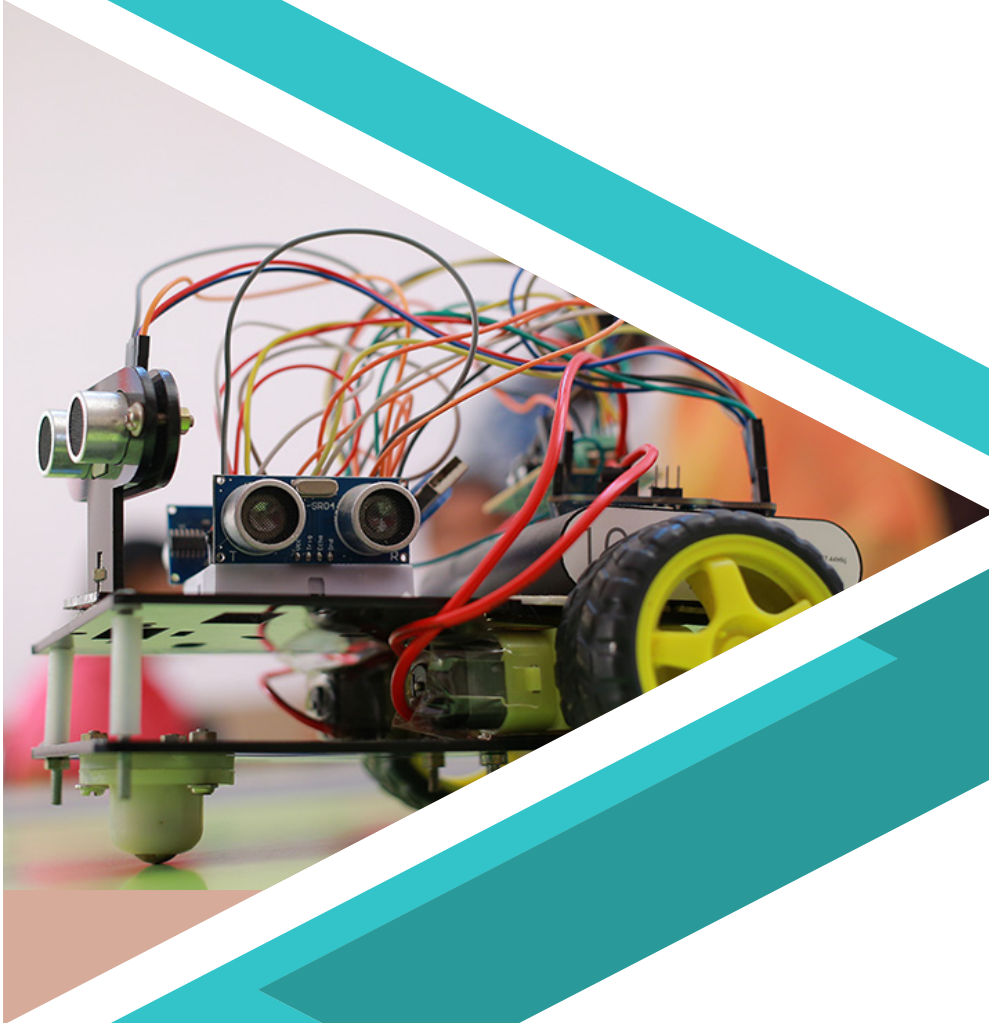
AAGF-CNN:
An Android Application for Grading Fruits using CNN

M.Sai Manvitha, P. Jaya Vineela, P.Rishitha ,
Mentor: Prabu.U

In this proposed system, the grading of fruits is done by using a Convolutional Neural Network (ConvNet/CNN) which is a Deep Learning technique. It is an efficient and effective machine vision system based on the deep learning techniques and it offers a non-destructive and cost-effective solution for automating the visual inspection of fruit freshness, ripeness and appearance. The proposed system captures the image with a camera and converts it to pixels and pre-process the image into a deep learning model which displays whether the fruit is healthy or defected. The real time system efficiently segments multiple instances of the fruits from an image then grades the individual objects (fruits) accurately. The system was trained and tested on two data sets (apples and bananas). The test results show that the system can sort 89% bananas and 86% apples accurately when tested with real time images.

Covid and Pneumonia Analysis Through Chest X-Ray

G.Pratap, G.Chaitanya, M.Sarath, U.Venkata Sai,
Mentor: Dr.K. Praveen Kumar

The proposed study seeks to diagnose Pneumonia and COVID patients using Chest X-Rays. For the specified dataset, the suitable CNN Model is determined. Using a database of chest X-Ray pictures from genuine patients, the model acknowledges Pneumonia and COVID patients. Images are pre-processed and properly trained for categories such as Normal, Pneumonia and COVID. Following pre-processing techniques, disease identification is performed by picking relevant features from each dataset's images. The graph depicts COVID detection accuracy to Pneumonia detection accuracy and vice versa. Not only does this approach detect Pneumonia or COVID, but it also recognises Pneumonia subtypes such as bacterial or virus infection, with accuracy rates of 81 percent and 91.46 percent respectively. The proposed approach for identifying COVID, Bacterial Pneumonia, and virus infection aids. COVID may be diagnosed and differentiated from various kinds of pneumonia quickly allowing for the adoption of suitable and timely treatments.
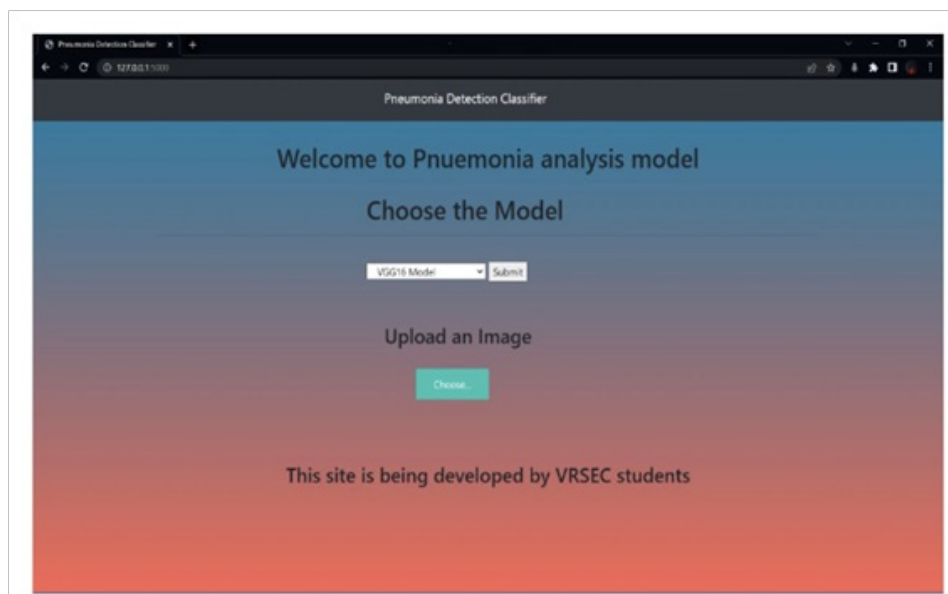
IoT Based Smart Manhole Alert System

B.Meghana, G.Sai Gopala Swamy, R.Tejomai, M. Srilatha
Mentor: Dr.K L Sailaja

IR sensors and open lid sensors are used for detecting overflow open lids in manholes. Building an app "IoT BASED SMART MANHOLE ALERT SYSTEM" which will notify the users about the manhole troubles through SMS using the GSM module, providing a history of notifications in the app for precautionary purposes, enabling the users to post their queries troubles with manholes, providing a step in ensuring their safe journey.
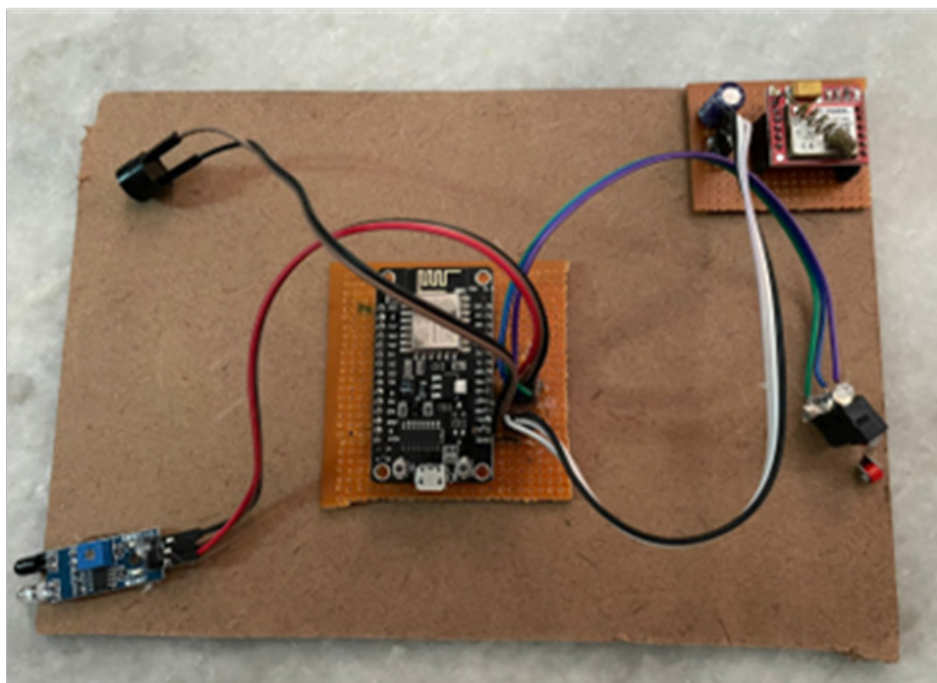
Diabetic Retinopathy Classification using deep learning techniques

M.Sravani, P.VamsiPriya, V.Vandana
Mentor: Dr. D. Rajeswara Rao

We built a model using deep learning Residual networks extracting the features blood vessels and exudates extraction and can assist the opthmologists by providing clear images of the retina, blood vessel extracted images and also provides the classification based on severity like mild, no dr, and proliferative dr, severe. These phases are pre-processing, blood vessel and exudates detection i.e. feature extraction and classification. In this work, From the presented retinal fundus pictures, we utilized the Res-Block model to classify and diagnose diabetic retinopathy and obtained an accuracy of 92%.


Fig 1. Represents Predictions of our model

Fig 2.Represents the blood vessels (top) and exudates(bottom)
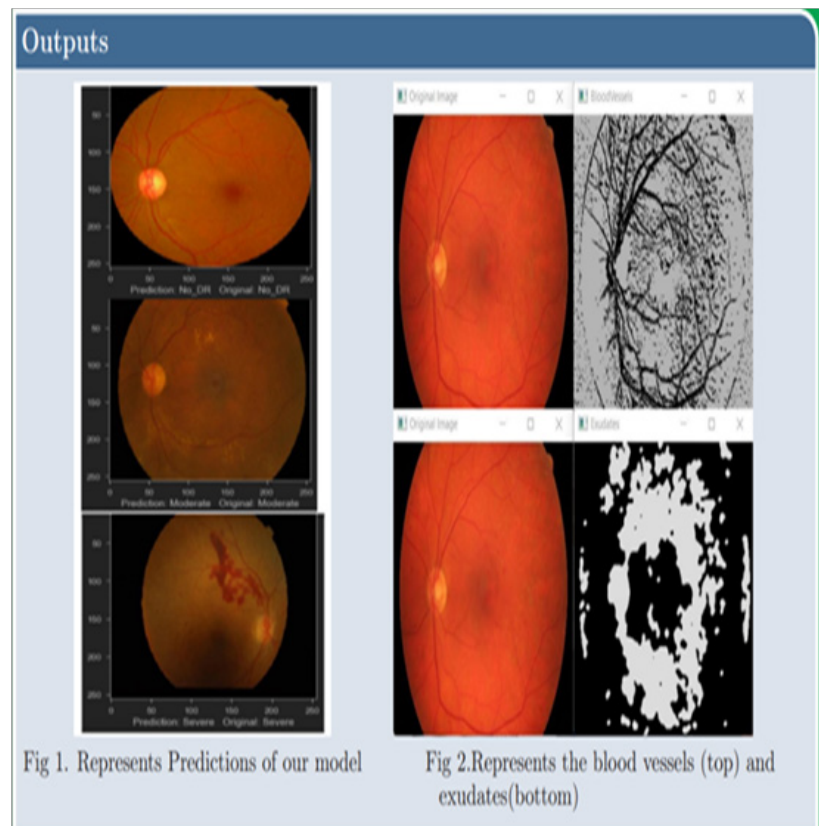
Estimation of Change In Wetland Area Using Sentinal-2 Satellite Images

A Lalitha Anupama, Popuru Sahithi, Shaik Asha Afreen,
Mentor: Dr K L Sailaja

This project Monitors water bodies such as lakes, ponds and wetland crops. Input images are collected from Sentinel Hub EO Browser. The input images for monitoring water bodies are based on NDWI (Normalized Difference Water Index) and for monitoring wetland crops the input images are based on NDMI (Normalized Difference Moisture Index). In monitoring water bodies' module, pre-processing is done using Gaussian Blur, Clustering is done followed by edge detection and comparing the changes in area of water bodies over last 5 years using OpenCV. In monitoring wetland crops module, clustering is done followed by comparing the changes in moisture percentage over last 5 years using OpenCV, Morphological transformation of dilation on the image followed by bitwise AND operation between the original image and masked image to specifically detect only the blue and shades of blue and discard other colours. K-Means and Fuzzy-C-Means algorithms used for clustering. Canny edge detector algorithm is used for edge detection.
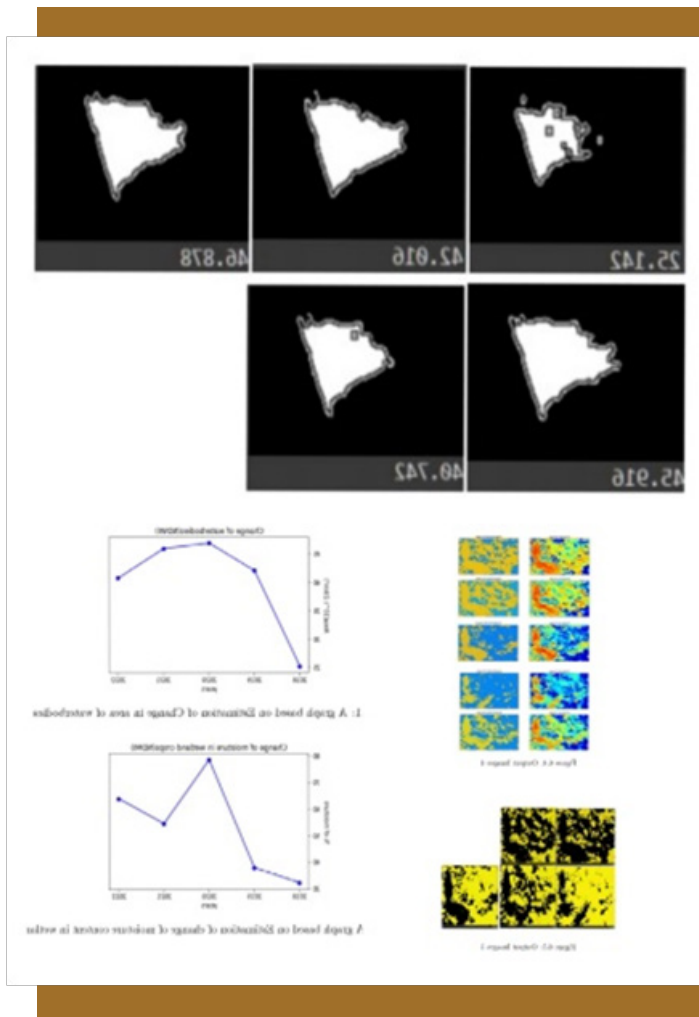
Dynamic Interactive Postal Pin Code Recognition System Using OCR

Kirthan Dhulipalla, Chanamolu Sravan, Venkat Sai
Mentor: Dr. P. Ramesh Kumar

In Many areas the majority of the postal systems are still manually operated for pin code recognition and processing. It has been discovered that recognition and processing has numerous disadvantages, including human errors, increased processing time, and the need for additional man power. The method we are implementing for this system is automated recognition via Image Processing and Optical Character Recognition (OCR). In this method, a camera is used to capture images of postal items, and OCR is used to recognize postal pin codes. In this Method, we will train one of the post card formats by abstracting the required fields has a cropped image, abstracting data from it, and sending it to a fire store. so, the next time you upload a post card in the same format, the data is extracted as a trained image and saved in fire store.

PROBLEM STATEMENT

To create and implement an OCR engine that will recognize post cards by extracting the pin code. The primary goal of this project is to reduce the amount of time spent recognizing letters one by one.

Heart Defect Detection in Foetus

Tellakula Avinash, Sravani Narayana, ShaikSuhana Sultana
Mentor: B. Jayanag

Ultrasonography is performed during early pregnancy for determination of the early complications, anomalies, increasingly for evaluation of the foetus. Therefore, finding an indication for a more detailed anatomic survey of the foetus. Ultrasound can identify the majority of major structural foetal abnormalities. Minor anomalies in 15 new-borns. Greater number of minor anomalies causes greater chance of having major birth defects. The aim of the project is to train the model to detect the abnormalities using the ultrasound images of the foetus at the early stages. As many of the structural anomalies can be treated if detected in early stages, the manual diagnosis requires considerable effort, time consuming and is prone to misdiagnosis. Therefore, using software can avoid misdiagnosis and reduce overall time and effort.

Crop Recommending Web Application

M.SaiMeghana,Ncvs Sai Chandana,V.MohanaSrivalli,
Mentor: Dr. D. Rajeswara Rao

This project focuses on recommending optimum crops to be cultivated by farmers based on several parameters and help them make an informed decision before cultivation. A website has been built so that user can interact easily. This prediction is done using some machine learning algorithms like logistic regression, Random Forest, Decision Tree.

Guide Me Glasses

MutakaniYaswant , PandiAnandVardhan , TatikondaDivya Kiran , M Madhavi

We introduced an assistive smart glass for visually impaired people that can help them to read text, get information from the web, recognize and detect people faces and obtain the present time, weather forecast. When user wants something he/she will initiate the smart assistant with the hot word. After initialization he/she can start giving voice commands. With a voice command an instruction is executed and the output is sent to user in the form of audio. So, with the help of these assistive smart glasses the blind people can lead a normal life like others.
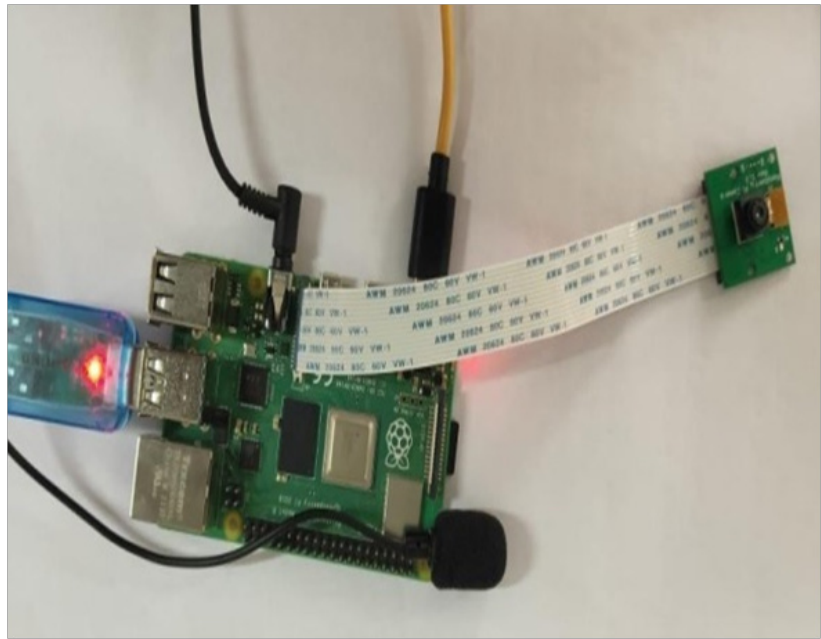
Mobile Application for Grocery Shopping

N. Naga Anjaneyulu,N.M.SVenkata Sai Krishna, Pitta Mokshagna Sai,VemulaVema Sri

The main objective of this mobile application is to provide the customers to make it interactive and its ease of use. This app will allow customers to make searching, viewing and selection of a product easier. Customers can buy the products from anywhere and anytime instead of waiting in the queue to buy the products. The user can see the list of products that are available. They can then view the complete specification of each product. This app enables the customers to add the items in cart and allows them to select the number of items. And also allows the user to deselect if they don't need the transaction. Customer can make payment through online for the products added to cart. It simply provides the user friendly environment to the customers as well as Admin. The Admin can be able to show the purchase details of all the customers. So, it is easy for the Admin to view which products are highly purchased and tried to increase the stock of the products. The Admin is responsible for adding the products and can be the person to modify any details of the product.

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