

UNIVERSAL ENGINEERING COLLEGE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

GIGA CHRONICLES 20-21



Vision ●

Empower universally equipped computational technocrats having innovative entrepreneurial skills with holistic values.



Mission ●

- With well experienced faculty members and excellent infrastructure, provide way to equip universally acclaimed computational technocrats.
- With institute industry interaction, develop apt skill in entrepreneurship innovativeness.
- Provide value based education to meet the technical and computational needs of the society



Program Specific Outcomes ●

PSO1: Ability to provide refined solutions based on expert knowledge in evolutionary change in computing environment and entrepreneur practises to the various needs of the society.

PSO2: Impart skills to solve problems in the area of computer programming and appraise environmental and social issues with ethical sustainable solutions .

PSO3: Disseminate wider knowledge of various latest domains to analyse and determine research gaps and hence provide solutions by new ideas and innovations.



Program Educational Objectives ●

- **PEO1:** Inculcate ability to analyse the computer science and engineering problems by assimilating technical knowledge .
- **PEO2:** To groom the students to be adaptable to the ever changing technological challenges and career opportunities.
- **PEO3:** To make students proficient in fundamental knowledge and engross them in pursuing higher education and research oriented activities.

MEET OUR TEAM



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Asst.pro CSE



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S8 CSE



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S4 CSE



Vishnu Murali
S6 CSE



Devika Madhu
S2 CSE

We would like to express gratitude to all those who have contributed to the production of this year's magazine. Without your support, this would not have been possible. We would like to thank our editorial team for their hard work and dedication in bringing together this wonderful publication. We also extend our appreciation to Our,
Principal Dr. Jose K. Jacob,
Dr. Sreeraj R H.O.D (CSE), magazine incharges Ms. Nighila Ashok and Ms. Muneebha mohyiddeen , who have contributed their valuable insights and expertise. We are grateful to our staffs and students, who have submitted their articles, artwork, and photographs, which have added color and vibrancy to this magazine. "GIGA CHRONICLES" (2020-21).

MESSAGE FROM HEAD OF THE DEPARTMENT



Dear Students, Faculty, and Readers,

As we reflect on the academic year 2020-2021, I am filled with immense pride and admiration for our Computer Science and Engineering department. Despite the unprecedented challenges brought on by the global pandemic, our students, faculty, and staff have demonstrated remarkable resilience, adaptability, and dedication.

This year has underscored the importance of technology in our daily lives, and I am proud to say that our department has been at the forefront of innovation and excellence. Our faculty have continued to provide exceptional education and mentorship, ensuring that our students remain engaged and inspired, even in a remote learning environment.

Our students have risen to the occasion, embracing new modes of learning and excelling in their academic and research pursuits. They have shown that perseverance and a passion for knowledge can overcome any obstacle. Their work in areas such as artificial intelligence, machine learning, cybersecurity, and data science has not only earned them accolades but also contributed significantly to the field.

We have also seen incredible collaboration and community spirit within our department. Students and faculty have come together to support one another, sharing resources, knowledge, and encouragement. This sense of unity and shared purpose has been a beacon of hope and strength throughout the year.

To our students, I urge you to continue pushing the boundaries of your knowledge and skills. The field of computer science is ever-evolving, and your innovation and determination will be key to shaping the future. Every challenge you face is an opportunity for growth and discovery.

This magazine is a celebration of our collective achievements and a testament to the hard work and dedication of everyone in our department. I extend my heartfelt gratitude to all who contributed to this publication and to those who have supported our journey throughout the year.

Let us continue to inspire, innovate, and excel as we look forward to brighter days ahead.

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Fruit system using multiclass SVM classifier



The fruit grading by visual inspection suffers from the problem of inconsistency in judgment by different persons. There is a need for an automatic fruit classification machine replacing the expensive human labor with a smart fruit quality classification system. This study proposed a practical real-time smart fruits quality grading system classifying by appearance and internal flavor factors in order to decrease human labor cost in fruit industry. The proposed system applies color image processing techniques for the computation of the fruits appearance features and the near-infrared spectroscopy analysis methods for the estimation of internal flavor factors. This study also suggests an artificial neural network model in order to be able to classify fruit grading. The proposed ANN model is trained and tested with 1,900 numbers of pears for grading. It has achieved the classification accuracy rate of 97.4% in our experiment

ASWIN BABU

S8 CSE

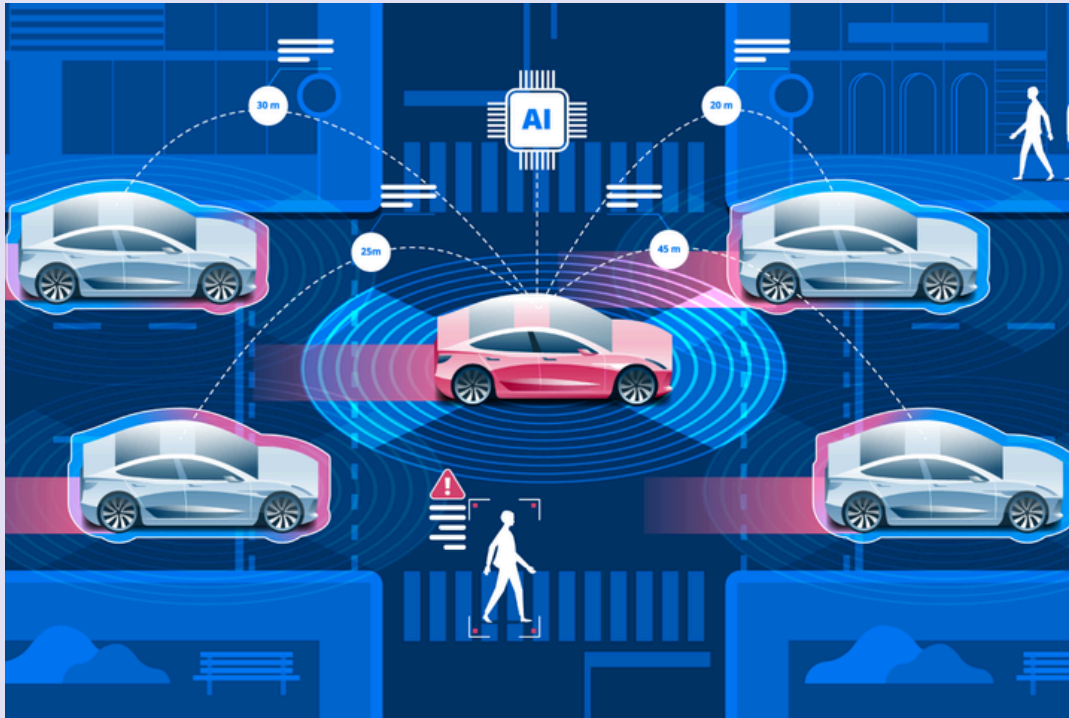
Smart mobile application to recognize tomato leaf diseases using Convolutional Neural Networks



The automatic identification and diagnosis of tomato leaves diseases are done with the help of CNN. In this study, an efficient smart mobile application model based on deep CNN to recognize tomato leaf diseases is proposed. it can recognize the 10 most common types of Tomato leaf disease

VISHNU MURALI
S6 CSE

Design & implementation of real time autonomous car by using image processing & IoT



Traffic Sign Detection and path identification are as yet thought to be a significant task in self-governing vehicles and Driver Assistance Systems (DAS) or Self Driving Car. Profound neural Network can remove and take in increasingly unadulterated highlights from the Raw RGB picture got from nature. This paper proposes an Autonomous vehicle or robot that can identify the diverse article in condition and group them utilizing CNN model and through this information can take some continuous choice which can be utilized in the Self Driving vehicle or Autonomous Car or Driving Assistant System (DAS).

MOHAMMED RASNAL
S4 CSE

Intellidoctor - AI based medical assistant



This is an Artificial Intelligence (AI) based personal medical assistant to provide an interactive healthcare system to diagnose, predict medical conditions, generates treatments and suggestions based on the inputs provided by the user. The main segment is to assist the users depending on the data entered and to provide them with a list of possible medical problems and treatment procedure accordingly.

DEVIKA MADHU
S2CSE

Domain Specific Intelligent Personal Assistant with Bilingual Voice Command Processing

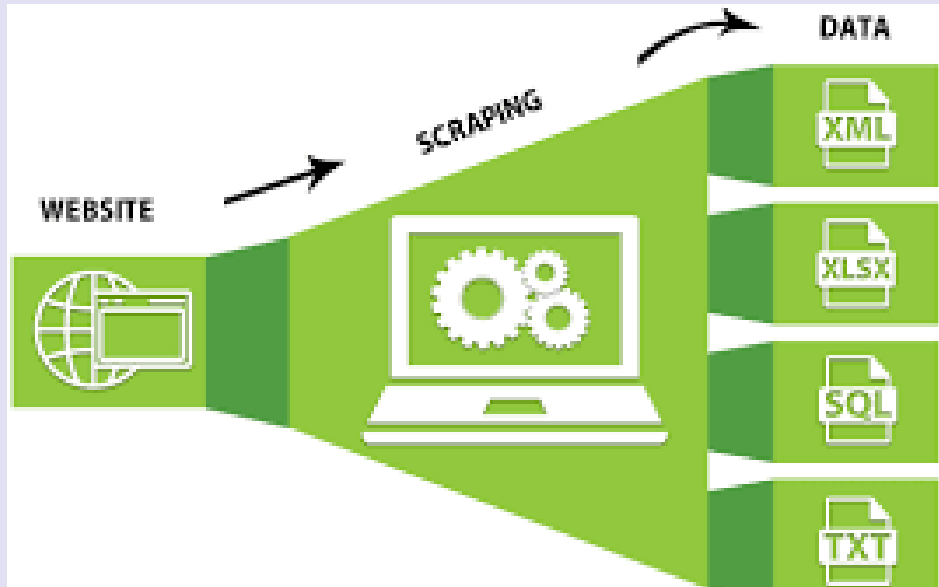


voice operated IPA to perform menial tasks for the users. The speech recognition engine of the IPA is constructed with Sphinx-4, and the language processing is performed by a modified finite state automaton. An Intelligent Personal Assistant (IPA) is a computer program with Artificial Intelligence (AI), designed to aid its users with their tasks. The IPA communicates seamlessly with its users while it answers their inquiries or performs actions to satisfy their requests

SAYUJ SAJEEV

S8 CSE

Exploiting Filtering approach with Web Scrapping for Smart Online Shopping



With the advancement in technology and popularity of e-commerce, the number of online shopping websites have been increased rapidly in the cyber world. This made people's life easy because it is easy to shop through internet. But this also bring effort for people as they spend a lot of time and efforts to search best product deals and offers on e-commerce websites. They have to filter and compare data by themselves.. This paper is based on web crawling and scraping methods applied for identifying best deals from five e-commerce websites.

AKHIL KUMAR
S6 CSE

Virtual Cart : Novel Approach For Revamping Smart Shopping Experience

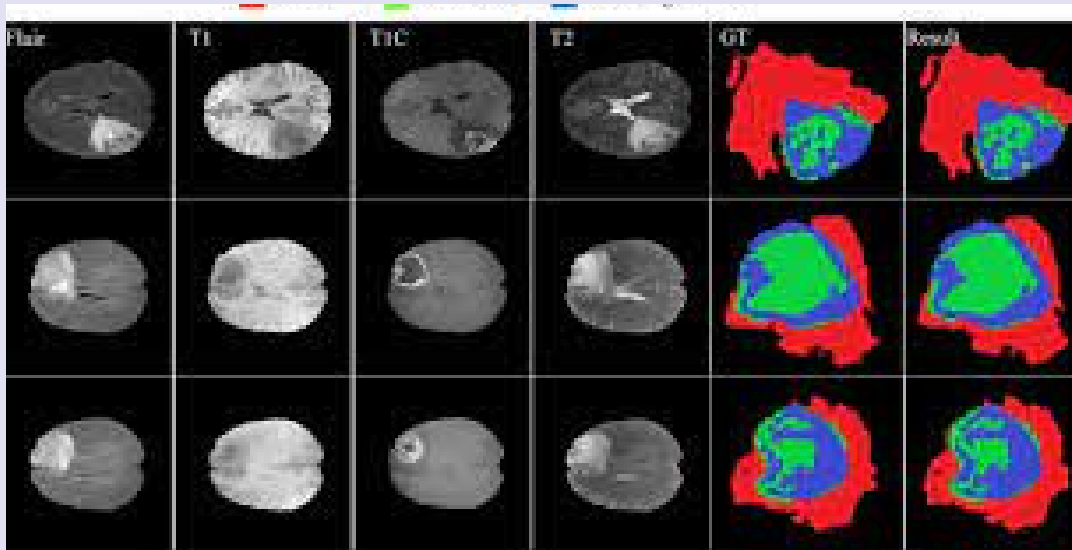


smartphone application named Virtual Cart for facilitating an easy and convenient method for purchasing in shopping malls. Shopping at malls is a frequently carried out activity in . There can be a big rush at malls on holidays, weekends especially during special offers and discounts. Contrast to shopping in malls, people prefer online shopping to get required items through Amazon, Flipkart and Snapdeal etc., where they cannot have the look and feel of items unless they receive the delivery. So, to solve this problem we have proposed Virtual Cart, using which, one can overcome the complications of online and offline shopping by ensuring a better shopping experience.

MAXEN VARGHESE

S4 CSE

Brain Region Segmentation Using Convolutional Neural network



Brain region segmentation or skull stripping is an essential step in neuroimaging application such as surgical, surface reconstruction, image registration etc. The accuracy of all existing methods depends on the registration and image geometry. When this fails, the probability of success is very less.

In order to avoid this, Convolutional Neural Network (CNN) is used. For brain extraction which is free from geometry and registration. CNN learned the connectedness and shape of the brain. OASIS database is used which is publicly available benchmark dataset. In this method, training phase uses 30 images and 10 images are used for testing phase. The performance of CNN results is closer to the ground truth results given by experts. Keywords– Brain region segmentation, skull stripping, MRI, convolutional neural network.

MAHIN M M

S2 CSE

Image classification and text extraction using machine learning.



Machine Learning is a branch of Artificial Intelligence in which a system is capable of learning by itself without explicit programming or human assistance based on its prior knowledge and experience. In the proposed system, image classification is implemented using Convolutional Neural Network (CNN). The CNN performs better on very large datasets, by overcoming the problem of over fitting. Also, single line text extraction is replaced by multiple line text extraction. Thus, the accuracy of this system can be improved by incorporating a large dataset and increasing the number of epochs. In addition, a trial-and-error methodology is used to determine the number of convolution and pooling layers with the number of nodes in each layer.

MANOJ M

S2 CSE

APPLICATION OF MACHINE LEARNING IN DESEASE PREDICTION



Machine learning has made easier to identify different diseases and diagnosis correctly. Predictive analysis with the help of efficient multiple machine learning algorithms helps to predict the disease more correctly with higher accuracy and help treat patients.

SIBY AUGUSTY
S8 CSE

Evaluating ResNeXt Model Architecture for Image Classification



ResNeXt model uses a homogeneous, multi-branch architecture for image classification. The popularity of ResNext model for image classification paves a way to further investigations on the model architecture and its configurations. It also improves the state of the art in image classification

AKHIL KUMMAR

s6 cse

Optical Character recognition on images with colorful background



A preprocessing method is presented for improving Tesseract Optical Character Recognition (OCR) performance on images with colorful background. The proposed method consists of two steps. At first, a text segmentation method is performed which attempts to extract the text from the colorful background. In the second step, a classifier is used to identify the image containing text among k images resulting from the previous step. OCR is then performed on the identified image

ROHAN R K
s2cse

FACE DETECTION AND RECOGNITION USING OPENCV



Face detection and picture or video recognition is a popular subject of research on biometrics. Camera based real time face recognition system and set an algorithm by developing programming on opencv. Harcasade, Eigen face, Fisher face, LBPH are commonly using recognition algorithms.

KRISHNA C R
s8 cse

VOICE COMMAND RECOGNITION WITH REDUCED DATABASE USING CLOUD TECHNOLOGIES AND AI



Voice command recognition technology and its applications in different industries becoming apparent. Voice recognition with reduced database is developing in NVIDIA platform using DSP algorithms. To create reduced database training and testing algorithms are used using artificial intelligence and artificial neural networks. DSP, ASR, MFCC algorithms are the usual algorithms used for recognition.

ALISHA P D

s8 cse

Brain Controlled Wheelchair



The seminar is about Brain Computer Interface is a technique through which a direct communication link can be established between a human brain and an external device using Electroencephalogram (EEG) signals. This technique is used to implement a brain controlled wheelchair for elderly people or people who are paralysed. This paper represent a brain controlled wheelchair to replace traditional way of controlling wheelchair. The concentration of the signal in the EEG is taken as the signal to control the wheelchair and the signal is transmitted to the STM32 to realize the forward control of the wheelchair.

NANDANA NARAYANAN

s4 cse



