

Autonomous | Affiliated to Anna University, Chennai Accredited by NAAC with 'A' Grade | Accredited by NBA (ECE, EEE, CSE and IT)



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COLUMN TWO IS NOT

KARPAGAM COLLEGE OF ENGINEERING

2021-2022

TECH TODAY MAGAZINE 2021-2022

Chief Patrons: Dr.R.Vasanthakumar, Chairman

Patrons:

Shri. K. Murugaiah, CEO

Chairman:

Dr. P. Vijayakumar, Principal

Advisory committee: Dr.S.Angel Latha Mary, HoD/CSE

Editor:

Ms.S.Ramamani, Assistant Professor/CSE

Editorial Board

Thirumoorthy(20P355)-II CSE Baskar(20P306) -II CSE Nitheesh(20P333) -II CSE Vasigaran(20P357) -II CSE

Department of Computer Science and Engineering Vision

D)

To create computer professionals with a strong academic and technical background to achieve special distinction at the national and international arena and also to serve and lead the society.

Mission

- Providing excellent learning opportunities for students in Computer Science and Engineering to meet the needs of Nation as a whole.
- Establishing centers of research in areas of immediate needs to society.
- Develop ICT based solutions for the development of the nation.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Programme Educational Objectives (PEOs)

1.PEO1:

Graduates will be able to comprehend mathematics, science, engineering fundamentals, laboratory and work-based experiences to formulate and solve problems in Computer Science and Engineering and other related domains and will develop proficiency in computer based engineering and the use of computation tools.

2.PEO2:

Graduates will be prepared to communicate and work effectively on the multidisciplinary engineering projects practicing the ethics of their profession with a sense of social responsibility.

3.PEO3:

Graduates will recognize the importance of lifelong learning to become experts either as entrepreneurs or employees and to widen their knowledge in their domain.

Programme Outcomes

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering Problems.

PO2: Problem analysis: Ientify, formulate, review research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

PO3:Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental Considerations .

PO4: Conduct investigations of complex problems: Use research-based knowledge and Research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and Information Technology tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6 :The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES

PSO-1: Analyze, design, implement, test and evaluate computer programs in the areas related to algorithms, networking, web design, cloud computing, Internet of Things (IoT) and data analytics of varying complexity.

PSO-2: Develop innovative ideas to provide solutions for complex problems and apply advanced knowledge of computer science domain to identify research challenges in Computer Science and Engineering.

ABOUT THE DEPPARTMENT

The Department of Computer Science and Engineering was established in the year 2000 and it offers four year undergraduate program in Computer Science and Engineering. The Department is located in a newly constructed 70000 Sq.ft high-tech Computer Science and Information Technology block. The Computer Science and Information Technology block also includes a separate laboratory block and an Open Air Theatre with a capacity to accommodate 500 students. The Department has a separate library of more than 1000 books, international journals, national journals, magazines, back volumes, project reports and lecture CDs. The department maintains exclusive question bank library comprising vast collection of courses related to computer science and engineering. The department has good record of student placements in national, international and multinational companies.

The Department imparts value addition to the students by providing weekend courses on fundamentals and also by aiding students with industry sponsored programs offered through the coordinated efforts of the faculty and industry partners from IBM, Infosys, RedHat Academy, ICT Academy and Oracle Workforce Development Programme (WDP).

Department of Computer Science and Engineering has signed MOU with IBM, Oracle, Global Edge, Microsoft India Ltd, Red Hat Academy and Infosys to help the students in training and to instill them with skilled resources based on leading software technologies. Periodic faculty Enablement Programmes are offered to our faculty members by technical experts from Infosys and ICT Academy. The department has 9 laboratories with 567 computers.

Program Offered

B.E COMPUTER SCIENCE AND ENGINEERING

Lab Facilities

Allen Turing Lab

Emc² Lab
IBM Lab

Oracle WDP Lab

Students Article.



ANDROID JOB PORTAL SYSTEM APP

ADVANTAGES

- It is easy to maintain.
- It is user-friendly.
- The recruiter can find candidates as per the company's requirements without facing a lot of difficulties.
- The user can also find the jobs they are looking for.

ANDROID JOB PORTAL SYSTEM APP

Android Job Portal System App

An employment portal is an application that facilitates the search for employment and ranges from large, generalized sites to specialized working groups for work categories such as engineering, law, insurance, social work, teaching, and developing mobile applications. Users can usually submit their resumes and send them to potential employers and recruiters for review, while employers and recruiters can post job postings and search for potential employees.

Niche job directories begin to play a bigger role in providing jobs and employees with more goals for the candidate or employer. Our androidbased Job Portal System will provide a very specific way to eliminate and reduce the time for the most appropriate role. The determination is to allow communication between the interested parties and complete the task of recruitment quickly. Recruitment is often reported in the literature as the process of analyzing the job requirements, pooling together a network of qualified candidates, and hiring the best-fit person for the role in order to gain a competitive advantage. Selection is the process of choosing the best-fit person for the role from the generated pool of qualified candidates.

A job portal is a platform dedicated to online information about recruiters as well as job seekers. A job portal helps both job seekers and recruiters find the right organization for the employees. In the case of job seekers, according to their educational qualification, experience, and their preferences, the job portal shows the list of companies to the job seeker. And, to the recruiters, provides the suitable candidates from a pool of lacks. The objective of the Job Portal System is to develop a system to enable interaction between employers and applicants. In this project, the front-end involves XML, Android-Java and the back-end involves MSSQL. The IDE used is Android Studio.



NAME:GIRINATH.B(II) ROLL NUMBER:20P113

AI CHATBOT APP USING DIALOG FLOW IN FLUTTER

Ai Chatbot App Using Dialog Flow In Flutter

A chatbot is a computer program that interacts with users using natural language or text, giving the impression that the user is conversing with an assistant. In order to produce the necessary response, most chatbots use Artificial Intelligence (AI) techniques.

Chatbots are now commonly used for a variety of corporate, personal, and educational purposes. Chatbots are userfriendly, and anybody who is capable of typing in a smart phone application may use them. Dialog Flow is a service which provides a complete product to implement voiceand text-based conversational interfaces. It employs Machine Learning to conduct a conversation as naturally as possible.

Here, we have implemented a chatbot using Dialog Flow technology which will be helpful for the user to chat. Dialog Flow is a platform by google where we can design the chatbot what can be the question, how the chatbot will answer, related answers or modules etc.

This project is written in Dart and the database used here is SQLite, and it is based on the flutter framework. Dart is a programming language that Google developed and keeps up with. A cross-platform framework for building high-performance mobile apps is called Flutter.

Advantages:

➢ It is easy to maintain.

➢ It is user-friendly.

The user can ask any sort of question and they will be answered by the bot. No need for human interaction and it saves time to reach people for clearing their doubts.



NAME:KALAIARASI(II) ROLL NUMBER:20P123 **O**

Body Pose Detection App using Google ML-Kit Flutter



BODY POSE DETECTION APP USING GOOGLE ML-KIT FLUTTER

Human posture is an important body part that indicates the fundamental structure of the human body. ML Kit Pose Detection doesn't require specialized equipment or ML expertise in order to achieve great results. With this technology, we can create one-of-a-kind experiences for the users.

ML Kit Pose Detection produces a fullbody 33-point skeletal match that includes facial landmarks (ears, eyes, mouth, and nose) and points on the hands and feet. The user's face must be present in order to detect a pose. Pose detection works best when the subject's entire body is visible in the frame, but it also detects a partial body pose. The aim of our flutterbased Body Pose Detection System using Google ML-Kit to develop is an application that can analyze the human body posture by capturing an image of the body and providing the details of it. This project is written in Dart and the database used is SQLite, and it is based on the flutter framework. Dart is a programming

language that Google developed and keeps up with. A cross-platform framework for building high-performance mobile apps is called Flutter.

In this system, the user can upload an image from their phone's gallery or capture a photo. From the static image, the system will detect the body posture with the details. Here, there is also another option available, a real-time camera. The user can open their phone's camera to see the body posture in realtime. The system will display the posture details to the user.

The ML Kit Pose Detection API is a lightweight versatile solution to detect the pose of a subject's body in real-time from a continuous video or static image. A pose describes the body's position at one moment in time with a set of skeletal landmark points. The landmarks correspond to different body parts such as the shoulders and hips. The relative positions of landmarks can be used to distinguish one pose from another.

Advantages

- ✤ It is easy to maintain.
- ✤ It is user-friendly.
- The user can easily detect body posture details from an image.
- Also, real-time body pose detection is also available.

	Text recognition	11 36	Image labeling		Language Identification
	Barcode scanning		Object detection and tracking		Smart Reply
7	Face detection		Digital ink recognition	X	On-device Translation



NAME :PAVITHARAN.K(II)

ROLL NUMBER: 20P136

PRE-TOUCH SENSING WITH SEA SHELL EFFECT

Seashell Effect Pre-Touch Sensing is a new form of sensing used to help robots sense the shape and material of objects before they grasp. "Pre touch" refers to sensing modalities that are intermediate in range between tactile sensing and vision. The novel pre touch technique is effective on materials for which prior pre touch techniques fail. Seashell effect pre touch is inspired by the phenomenon of "hearing the sea" when a seashell is held to the ear and relies on the observation that the "sound of the sea" changes as the distance from the seashell to the head varies. To turn the familiar seashell effect into a sensor for robotic manipulation, a cavity and microphone was built into a robot finger.

The sensor detects changes in the spectrum of ambient noise that occur when the finger approaches an object. Environmental noise is amplified most (attenuated least) at the cavity's resonant frequency, which changes as the cavity approaches an object. Robotic grasping is still a challenge due to persistent difficulties in perceiving unstructured environments. Long range vision/depth sensors can capture geometric and positional information, but inevitable problems such as occlusion and coordinate calibration errors may result in imprecise estimation of object shape. Since grasp planning is very sensitive to the shape estimation of an object, robotic grasping informed only by vision/depth sensor data is notreliable.

Detect both soft and/or shiny objects, which are difficult for other sensors to detect. Experiments have demonstrated the efficiency of our transmissive optical sensor in the application of both environment perception and robotic grasping. The main contributions of this work are summarized below:

• A novel transmissive optical pre touch sensor is developed and has been fully integrated into the fingertips of a PR2 robot platform and manufactured with inexpensive, commerciallyavailable components. • The proposed pre touch sensor can provide a simple, fast and reliable way to detect materials that previous sensors fail to detect such as shiny objects and extremely compliant materials.

• Heuristic algorithms are proposed for object detection in different situations with the proposed pre touch sensor and experiments are conducted to illustrate the efficiency of the algorithms in both environment perception and robotic grasping.



NAME:M.DHINESH(IV)

ROLL NUMBER:18P211

DISTRIBUTED DENIAL OF SERVICE (DDOS)



Distributed denial of service (DDoS) attacks is a subclass of denial of service (DoS) attacks. A DDoS attack involves multiple connected online devices, collectively known as a botnet, which are used to overwhelm a target website with fake traffic.

Unlike other kinds of cyber attacks, DDoS assaults don't attempt to breach your security perimeter. Rather, a DDoS attack aims to make your website and servers unavailable to legitimate users. DDoS can also be used as a smokescreen for other malicious activities and to take down security appliances, breaching the target's security perimeter. A successful distributed denial of service attack is a highly noticeable event impacting an entire online user base. This makes it a popular weapon of choice for hacktivists, cyber vandals, extortionists and anyone else looking to make a point or champion a cause DDoS attacks can come in short bursts or repeat assaults, but either way the impact on a website or business can last for days, weeks and months. the even as organization tries to recover. This can make DDoS extremely destructive to any online organization. Amongst other things, DDoS attacks can lead to loss of revenues. erode consumer trust, force businesses to spend fortunes in compensations and cause long-term reputation damage.

A botnet is a collection of hijacked connected devices used for cyber attacks that are controlled remotely from a Command & Control Center (C&C). These typically include personal computers, mobile phones, unsecured IoT devices, and even resources from public cloud services.

Types of DDoS attacks

DoS attacks can be divided into two general categories—application layer attacks and network layer attacks. Each of these types of DDoS attacks define certain parameters and behaviors used during the attack, as well as the target of the attack.

 Application layer attacks (a.k.a., layer 7 attacks) can be either DoS or DDoS threats that seek to overload a server by sending a large number of requests requiring resource-intensive handling and processing. Among other attack vectors, this category includes HTTP floods, slow attacks (e.g., Slowloris or RUDY) and DNS query flood attacks.

2. Network layer attacks (a.k.a., layer 3–4 attacks) are almost always DDoS assaults set up to clog the "pipelines" connecting your network. Attack vectors in this category include UDP flood, Gaming website hit with a massive DNS flood, peaking at over 25 million packets per second the size of application layer attacks is typically measured in requests per second (RPS), with no more than 50 to 100 RPS being required to cripple most mid-sized websites.



NAME:YUVARAJA.S(IV) ROLL NUMBER:18P349

BUG TRACKING SYSTEM

Bug Tracking System

A bug tracking system or defect tracking system is a software application that keeps track of reported software bugs in software development projects. It may be regarded as a type of issue tracking system. Many bug tracking systems, such as those used by most open-source software projects, allow end- users to enter bug reports directly. Other systems are used only internally in a company or organization doing software development. Typically bug tracking systems are integrated with other project management software.

A bug tracking system is usually a necessary component of a professional software development infrastructure, and consistent use of a bug or issue tracking system is considered one of the "hallmarks of a good software team".

The main benefit of a bug-tracking system is to provide a clear centralized overview of development requests (including both bugs and improvements; the boundary is often fuzzy), and their state.

The prioritized list of pending items (often called backlog) provides valuable input when defining the product road map, or maybe just "the next release". In a corporate environment, a bug-tracking system may be used to generate reports on the productivity of programmers at bugs. However, this fixing may sometimes yield inaccurate results different because bugs may have different levels of severity and complexity.

The severity of a bug may not be directly related to the complexity of fixing the bug. There may be different opinions among the managers and architects.

A local bug tracker (LBT) is usually a computer program used by a team of application support professionals (often a help desk) to keep track of issues communicated to software developers. Using an LBT allows support professionals to track bugs in their "own language" and not the "language of the developers



Distributed bug tracking

Some bug trackers are designed to be used with distributed revision control software. These distributed bug trackers allow bug reports to be conveniently read, added to the database or updated while a developer is offline. Fossil and Veracity both include distributed bug trackers. Recently, commercial bug tracking systems have also begun to integrate with distributed version control. Fog Bug, for example, enables this functionality via the source-control tool, Kiln.

Although wikis and bug tracking systems are conventionally viewed as distinct types of software, ikiwiki can also be used as a distributed bug tracker. It can manage documents and code as well, in an integrated distributed manner. However, its query functionality is not as advanced or as user-friendly as some other, non-distributed bug trackers such as Bugzilla. Similar



NAME: VISVAJEY APPRIYA.R.K(IV) ROLL NUMBER: 18P347

FACIAL RECOGNITION SYSTEM



measurement of a human's physiological characteristics, facial recognition systems are categorized as biometrics. Although the accuracy of facial recognition systems as a biometric technology is lower than iris recognition and fingerprint recognition, it is widely adopted due to its contactless process.

A [1] is a technology capable of matching a[3] Facial ishuman face from a digital image or a videodeployed isframe against a database of faces. Such a systemautomatic intypically employed to authenticate usersautomatic inthrough ID verification services, and works by[4]Facialfrom a given image.employed to

[2]Development began on similar systems in the 1960s, beginning as a form of computer application. Since their inception, facial recognition systems have seen wider uses in recent times on smart phones and in other forms of technology, such as robotics. Because computerized facial recognition involves the [3] Facial recognition systems have been deployed in advanced human-computer stemintgraction, video surveillance and automatic indexing of images.

[4]Facial recognition systems are employed throughout the world today by governments and private companies.

[5]Their effectiveness varies, and some systems have previously been scrapped because of their ineffectiveness. The use of facial recognition systems has also raised controversy, with claims that the systems violate citizens' privacy, commonly make incorrect identifications, encourage gender norms and racial profiling, and do not protect important biometric data. The appearance of synthetic media such as deep fakes has also raised concerns about its security.

[6] These claims have led to the ban of facial recognition systems in several cities in the United States.

[7] As a result of growing societal concerns, Meta announced.

[8] That it plans to shut down Face book facial recognition system, deleting the face scan data of more than one billion users.

[9] This change will represent.<u>Techniques for face recognition</u>

While humans can recognize faces without much effort, facial recognition is a challenging pattern recognition problem in computing. Facial recognition systems attempt to identify a human face, which is three-dimensional and changes in appearance with lighting and facial expression, based on its two-dimensional image. To accomplish this computational task, facial recognition systems perform four steps. First face detection is used to segment the face from the image background. In the second step the segmented face image is aligned to account for face pose, image size and properties, such photographic as illumination and grayscale. The purpose of the alignment process is to enable the accurate localization of facial features in the third step, the facial feature extraction. Features such as eyes, nose and mouth are pinpointed and measured in the image to represent the face.



NAME:OVIYA.D(III) ROLL NUMBER:19P225

XML DATABASE



An is a data persistence software system that allows data to be specified, and sometimes stored, in XML format. This data can be queried, transformed, exported and returned to a calling system. XML databases are a flavor of document-oriented databases which are in turn a category of NoSQL databases.

Rationale for XML in Databases There are a number of reasons to directly specify data in XML or other document formats such as JSON. For XML in particular, they include: An enterprise may have a lot of XML in an existing standard format . Data may need to be exposed or ingested as XML, so using another format such as relational forces double-modeling of the data . XML is very well suited to sparse data, deeply nested data and mixed content (such as text with embedded markup tags) XML is human readable whereas relational tables require expertise to access Metadata is often available as XML Semantic web data is available as RDF/XML Provides a solution for Object-relational impedance mismatch XML database also minimizes the need for extraction or entry of metadata to support searching and navigation.

Mainstream editions

Enterprise SQL Server Enterprise Edition includes both the core database engine and add-on services, with a range of tools for creating and managing a SQL Server cluster. It can manage databases as large as 524 petabytes and address 12 terabytes of memory and supports 640 logical processors (CPU cores).

<u>Standard</u>

SQL Server Standard edition includes the core database engine, along with the standalone services. It differs from Enterprise edition in that it supports fewer active instances (number of nodes in a cluster) and does not include some high-availability functions such as hot-add memory (allowing memory to be added while the server is still running), and parallel indexes.

Business intelligence

Introduced in SQL Server 2012 and focusing on Self Service and Corporate Business Intelligence. It includes theStandard Edition capabilities and Business Intelligence tools: Power Pivot, Power View, the BI Semantic Model, Master Data Services, Data Quality Services and xVelocity in- memory analytics.

Express

SQL Server Express Edition is a scaled down, free edition of SQL Server, which includes the core database engine. While there are no limitations on the number of databases or users supported, it is limited to using one processor, 1 GB memory and 10 GB database files (4 GB database files prior to SQL Server Express 2008 R2). It is intended as a replacement for MSDE. Two additional editions provide a superset of features not in the original Express Edition. The first is SQL Server Express with Tools, which includes SQL Server Management Studio Basic. SQL Server Express with Advanced Services adds full-text search capability and reporting services.



NAME: DHARMA.S(III) ROLL NUMBER: 19P211



















Name:B.Adithya(II) Roll Number:20P102







