

# Vivekananda College of Engineering & Technology

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 Affiliated to Visvesvaraya Technological University  
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PRJ-
Projects
Abstract
28/5/2024

## List of Projects: 2023-24

SNo	Dept	Guide	USNs	Title	Status	Abstract
1	EC	Prof. Shreyas H	4VP20EC006 4VP20EC019 4VP20EC032 4VP20EC039	An IoT Based Smart Asthma Alerting System.	Functional	A smart inhaler in asthma management could begin by outlining the purpose and significance of the device in improving asthma care. It might cover the key features, such as the integration of sensors and connectivity, enabling real-time monitoring of inhaler usage and environmental factors. The abstract could also highlight the potential impact on patient outcomes, like better adherence to medication, personalized treatment plans, and reduced exacerbations through data-driven insights. Additionally, it could briefly mention how such technology contributes to the evolution of personalized healthcare in chronic condition management. Combining an oximeter with a wristband in a smart inhaler for asthma management offers a comprehensive solution. The oximeter measures blood oxygen levels, providing crucial data for assessing asthma severity and potential complications. Meanwhile, the wristband could serve multiple functions, such as tracking physical activity, monitoring vital signs, or even acting as a central hub for data collection and connectivity, making the management of asthma more holistic and data-driven. This integration enhances the inhaler's capabilities, offering a more thorough approach to asthma care and management.
2	EC	Prof. Sowmya Anil	4VP20EC003 4VP20EC005 4VP20EC028 4VP20EC033	Warrior's Eye: An Autonomous Robot For Situational Awareness And Safety.	Functional	The "Warriors Eye" project is dedicated to the development of an autonomous robot designed to enhance situational awareness and safety in battlefield scenarios. The robot is equipped with a comprehensive array of sensors, including a camera module for video capture, GPS for navigation, a magnetometer for

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						<p>orientation, ultrasonic sensors for obstacle avoidance, and an inductive proximity sensor for metal detection. The main controller, Arduino, orchestrates autonomous movement based on predetermined coordinates obtained through GPS, ensuring precise navigation. During autonomous movement, the magnetometer guarantees accurate orientation, while ultrasonic sensors enable real-time obstacle detection and avoidance. The captured video feed from the battlefield is wirelessly transmitted via a Wi-Fi module to the user's end.</p>
3	EC	Dr. Shrikanth Rao S K	4VP20EC001 4VP20EC018 4VP20EC036	Fire Fighting Robot	Functional	<p>The Fire Fighting Robot (FFR) using Raspberry Pi is an innovative and autonomous solution designed to enhance fire-fighting capabilities in challenging and hazardous environments. Leveraging the versatility of Raspberry Pi, this robotic system integrates advanced sensors and decision-making algorithms to effectively detect, navigate, and combat fire incidents. This project proposes the development of a FFR utilizing Raspberry Pi as its core controller. This project aims to enhance fire-fighting efficiency and reduce human risk in hazardous situations. Equipped with sensors for fire detection, obstacle avoidance and human detection, the robot navigates autonomously through a designated area. The Raspberry Pi processes sensor data, making real-time decisions towards the fire source. Additionally, the project incorporates a water spraying mechanism controlled by the Raspberry Pi to suppress the flames effectively. This cost-effective and scalable solution addresses the critical need for advanced technology in fire-fighting scenarios.</p>

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4	EC	Prof. Rajani Rai B	4VP20EC014 4VP20EC031 4VP20EC020	IoT Solution For Enhanced Safety Monitoring And Tracking Of Small Sailing Boats.	Functional	Coastal Ocean weather is highly dynamic in nature due to the rapid change in the wind patterns from time to time. Mostly wind-generated waves are seen in the coastal region. Wind-generated waves in the shallow water can pile up suddenly which is a threat to coastal fishing activity. Coastal fishing activities take place in the coastal region by small motorized fishing vessels and local country-made FRP (Fibre Reinforced Plastic) boats. These local fishing vessel operations are unusual during high wind-wave conditions, resulting in overtopping and capsizing of fishing vessels. These capsizing events end with injuries and even lead to deaths in fisherman communities. It presents how the protection of innocent fishermen from the shooting and arresting by the other country navy is possible. The coastal area people are purely depending on fishing occupation in the sea. If the fisherman cross the border it should be treated as a serious offence. Due to unawareness about the boundary limits, the fisherman crosses the maritime borders .Once they cross the border, the boats are being captured by the neighbourhood countries coastal guards. Under such situation lives of fisherman are in danger. In such cases our border alert system for fisherman will help to overcome the fatalities
5	EC	Prof. Shivaprasad	4VP20EC008 4VP20EC026 4VP20EC040 4VP21EC404	Android Controlled Spy Robot With Night Vision Camera	Functional	The paper discusses about the development of an Android-controlled spy robot integrated with a night vision camera, designed for covert surveillance in low-light conditions. The primary objectives include the creation of a robust robotic platform, the integration of a high-performance night vision camera, and the development of a user-friendly Android application for remote control. The robotic system enables operators to navigate and monitor environments remotely, especially during nighttime operations. The integration of night vision technology enhances the surveillance capabilities, making

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						<p>the robot a versatile tool for security applications. The project involves a comprehensive exploration of hardware and software components, addressing challenges in mechanical design, electrical integration, and software development. The achieved results showcase a functional system with efficient remote control and enhanced visibility in low-light scenarios. The project contributes to the field of remote-controlled surveillance robots, emphasizing the importance of seamless integration of night vision capabilities for effective and discreet surveillance.</p>
6	EC	Prof. Nirupama K	4VP20EC007 4VP20EC016 4VP20EC043	Aquatic Waste Collector	Functional	<p>India, a country with a vast population, is struggling with waste management due to the rise in waste generation. The generated wastes are generally dumped into water bodies such as lakes, rivers, ponds, etc. making them unfit for amphibian life and human utilization. The government of India has taken the initiative to clean rivers and invest huge capital in many river-cleaning projects. This project “Aquatic Waste Collector” also focuses on the same issue. The main aim of this project is to reduce manpower, time consumption for cleaning the water bodies, and measurement of water quality. The Aquatic Waste Collector (AWC) presents a novel approach to tackle aquatic pollution by offering a remote-controlled waste collection system integrated with real-time water quality monitoring. This project introduces a versatile device capable of collecting waste upon approach. Additionally, it incorporates a turbidity sensor to assess water quality, providing crucial data for environmental monitoring. The AWC leverages the ESP8266 Wi-Fi module to enable remote control functionality, allowing users to manage waste collection and access real-time data via the Blynk platform.</p>
7	EC	Dr. Mahantesh R	4VP20EC009	Design And	Functional	<p>In the current technological era, computer vision plays a major</p>

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		Choudhari	4VP20EC015 4VP20EC021 4VP20EC037	Implementation Of 2d Object Similarity Detector Using Hu's Moments		<p>role in various automotive applications. Object similarity detection is a critical task in computer vision. It is applicable in automated inspection systems and beyond. Object similarity detection is a task of identifying similarities between a target object and test objects within an image. The project focuses on leveraging template matching with Hu's moments, known for their invariance properties. Detection of object similarity is important in areas spanning from autonomous robotics to the deployment of intelligent security systems. A notable limitation in many of the existing systems is the implementation of object similarity detection is neglecting memory usage for intermediate arithmetic operations. In order to address this limitation, a refined 2D Object Similarity Detection approach is introduced in this project. The proposed algorithm mainly utilizes image moments and spatial moments, providing a more robust foundation for the recognition of shapes and patterns. This is helpful in tackling the challenges associated with memory utilization and intermediate arithmetic operations. Notably, the integration of hardware, specifically the Raspberry Pi, represents a significant advancement in meeting the demands of intelligent embedded systems across diverse application domains.</p>
8	EC	Prof.Prabha G S	4VP20EC011 4VP20EC022 4VP20EC023 4VP21EC406	Lung Cancer Detection Using Deep Learning	working	<p>Pulmonary cancer also known as lung carcinoma is the leading cause for cancer-related death in the world. Early stage cancer detection using computed tomography (CT) could save hundreds of thousands of lives every year. However analyzing hundreds of thousands of these scans are an enormous burden for radiologists and too often they suffer from observer fatigue which can reduce their performance. Therefore, a need to read, detect and provide an evaluation of CT scans efficiently exists.</p>

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						<p>Our approach involves the development of a deep convolutional neural network (CNN) architecture specifically tailored for lung cancer detection. This CNN model is trained using a large-scale dataset comprising diverse lung imaging modalities, including X-rays, computed tomography (CT) scans. The YOLO model is adapted to detect lung nodules and lesions, which are common indicators of lung cancer.</p>
9	EC	Prof. Nithin	4VP20EC024 4VP20EC044 4VP21EC402	Smart Shopping Trolley Robot	Functional	<p>A robot which can help us in many fields like carrying items, work with more accuracy in lesser time in every kind of works. A machinery now a days very help in manufacturing sector. In our project we are going to modify the regular trolley as to make shopping autonomously. This project the we are making autonomous trolley to pick objects it is equipped with an RFID module and an ultrasonic sensor. The robot activates when a switch is turned on, indicating its readiness. Upon detecting an RFID card and ensuring a clear path with the ultrasonic sensor the robot reads the card's UID. Depending on the UID the robot navigates to specific positions pauses for a minute to pick object, and subsequently returns to its initial position while avoiding obstacles. The code includes functions for precise motor control forward, backward, left, right, stop and employs the ultrasonic sensor for obstacle detection and avoidance during the return journey. And another aim of the project part is to pick the object for this we using Arduino arm the trolley comes to near to object and picks item.</p>

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10	EC	Prof. Nisha G R	4VP20EC004 4VP20EC013 4VP20EC025 4VP20EC042	Screening Tool For Detection Of Developmental Dyslexia	Functional	Dyslexia is a learning disorder marked by difficulties in learning as a result of impairments to the processing related to the left hemisphere of the brain. In India, the prevalence of dyslexia is thought to be 15% or less. Since literacy is the corner stone of all learnings, it is imperative to diagnose dyslexia in children at a young age. Dyslexia should be diagnosed between the ages of 5 and 8 since early identification might support remedial interventions. By detecting dyslexia early on, school dropouts in the future can be avoided. One of the biggest obstacles to early dyslexia detection in children is a lack of knowledge among parents and instructors. The endeavor is made more challenging by the lack of straight forward, standardized screening and assessment instrument. A smartphone application to screen dyslexia offers the advantages of universal use and standardization. In this research work, a smartphone based screening application for dyslexia is developed. The app consists of questions that cover the area of general behaviour and qualities, reading skills, writing skills, mathematical ability, memory and cognitive skills. The app was created utilizing the expertise of special educators. The app generates visualization and provide scoring on the severity level of the dyslexia for user.
11	EC	Prof. Mahabaleshwara Bhat P	4VP20EC002 4VP20EC030 4VP20EC038 4VP20EC041	Enhancing Safety And Efficiency With Iot Enabled Smart Lpg Stove	Functional	Energy wastage is one of the most serious problems at present. LPG is the commonly used source of the energy for cooking in urban areas. In present LPG system there are several disadvantages like most of the energy wasted due to leakage of gas with current LPG cooking system, we don't have a option to set the ON period of the stove so that we can do other works during cooking process and we are least known about remaining gas in the cylinder. One of the major challenges at the present moment is the improvement of the current cooking system in



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						<p>urban areas where LPG is main source of cooking and to install LPG stoves in rural areas where LPG is less known. This project presents a comprehensive solution for enhancing safety, convenience, and efficiency in domestic cooking environments through the integration of various sensors, microcontrollers, and the Blynk platform. The system incorporates multiple functionalities, including LPG gas detection coupled with automatic gas cutoff, flame intensity control using a servo motor, programmable cooking timer, ignition control, cylinder weight monitoring, and automatic flame shutdown with vessel removal. These features collectively contribute to a safer, more convenient, and energy-conscious cooking experience, empowering users to enjoy their culinary pursuits with confidence and peace of mind.</p>
12	EC	Prof.Akshay S P	4VP20EC010 4VP20EC027 4VP20EC034	Health Care System With Iot Based Non-Invasive Diabetic Level Monitoring	Functional	<p>Diabetes is a common chronic disease seen in most countries worldwide. The most used method to measure glucose level in blood is an invasive method, which is painful and expensive and could be a danger in the spread of infectious diseases. Over the long term. The invasive method results in damage to finger tissues. As an alternative, the non-invasive method can be used, which facilitates frequent testing and relieves pain and discomfort caused by frequent finger pricks. In this project, a non-invasive method of measuring glucose levels and other health parameters is proposed. The variation in the intensity of NIR light received from the photodetector after passing through the finger is used to determine the glucose level of the blood, heart rate, oxygen level, and temperature. The measured health parameter is displayed on an LCD display and transmitted to the Android phone, which is used to display and store data via Bluetooth. The healthcare monitoring system project aims to develop a comprehensive solution for real-time patient health</p>



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						tracking. This system integrates wearable devices and advanced data analytics to provide continuous monitoring, early disease detection, and personalized healthcare recommendations, ultimately improving patient outcomes and healthcare efficiency.
13	EC	Prof. Shivaprasad	4VP20EC045 4VP21EC401 4VP21EC403 4VP21EC405	Cyber-Physical System Based Industrial Automation	Functional	This project explores how Cyber-Physical Systems (CPS) revolutionize industrial automation by seamlessly merging computational intelligence with machinery. By fostering interconnected devices, CPS monitors and autonomously controls industrial processes, boosting efficiency, quality, and flexibility. Leveraging real-time data analysis, CPS optimizes production, enhances product quality, and enables rapid adaptation to market changes. Key components include smart sensors for data collection, intelligent actuators for control, and advanced algorithms for decision-making. Compatibility between devices and software is crucial for successful integration. Overall, CPS-driven automation promises significant productivity gains, improved reliability, and adaptability in manufacturing.
14	EC	Prof.Prabha G S	4VP20EC012 4VP20EC017 4VP20EC029 4VP20EC035	Wearable Cardiorespiratory Device For Heart Attack Prediction	Functional	This project explores the integration of wearable Internet-of-Things (IoT) devices equipped with advanced sensors, including temperature sensors, pulse oximeters, and heart rate sensors, for enhanced heart attack detection. By leveraging these sensors, the wearable devices offer a holistic approach to cardiorespiratory monitoring, enabling real-time symptom analysis and early detection of potential cardiac events. The synthesis of findings from various research studies reveals the effectiveness of this sensor-driven approach in predicting heart attacks with greater accuracy. Furthermore, the report delves into the implementation of a notification system, facilitating

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					immediate alerts to both healthcare institutions and guardians upon detecting critical cardiac indicators. The comprehensive analysis presented in this report sheds light on the potential of sensor-integrated wearable IoT devices to revolutionize heart attack detection, providing timely interventions and improving overall cardiovascular health outcomes.
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