SRI VENKATESWARA

COLLEGE OF ENGINEERING AND TECHNOLOGY

Thirupachur-631203, Tiruvallur TK & DT

Approved by AICTE New Delhi & Affiliated to Anna University, Chennai

(A Telugu Minority Institution)

List of Students Under taking project work/mini Project /internship for the Academic Year 2022-2023

Program Name: ELECTRONICS AND COMMUNICATION ENGINEERING

PROJECT BATCH LIST 2022-2023

BATCH NUMBER	REGISTER NUMBER	STUDENTS NAME	PROJECT TITLE	NAME OF THE GUIDE
1	112419106012	PRITHIV RAJ K	AUTOMATIC INDICATOR COIL WINDING MACHINE	Mr. M.MUTHAMIZHAN
	112419106013	RAJKUMAR M		
2	112419106023	VASIGARAN S	MULTIPLE OBJECT DETECTION AND TRACKING USING DEEP LEARNING	Mrs. K. ARCHANA
	112419106014	RAKESH S		
	112419106025	VIJAY S		
	112419106002	DIVYA A		
3	112419106303	HARIHARAN V	IOT BASED SMART BLOOD BANK MANAGEMENT SYSTEM	Mr. V. RAJESHKUMAR
	112419106306	PRATHANA SHRI S		
	112419106305	NIRANJAN B		
	112419106307	RAJESH KANNA V		
4	112419106301	MONI SHANKARI	SURVEILLANCE ROVER WITH PAN-TILT MECHANISM USING ESP 32 CAM	Mr. M.MUTHAMIZHAN
	112419106007	LOKESHWARI		
	112419106304	KARTHICK		
	112419106022	SURYA		

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AUTOMATIC INDUCTOR COIL WINDING MACHINE

A PROJECT REPORT

Submitted by

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RAJKUMAR M - 112419106013

in partial fulfilment for the award of the degree
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BONAFIDE CERTIFICATE

Certified that this project titled **"AUTOMATIC INDUCTOR COIL WINDING MACHINE"** is the bonaf ide work of **PRITHIV RAJ K-112419106012, RAJKUMAR M – 112419106013** who carried out the project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other project work/thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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ABSTRACT

The surveillance rover that will provide live video streaming while moving around the area need to monitor. It will be observed and controlled remotely using straightforward engineering. The web application will have a video screen for observation and catch signals to control the rover and camera. The system uses an ESP32 microcontroller, an ESP32-CAM camera module, and servo motors to achieve a two-axis pan-tilt mechanism for the camera. The pan-tilt mechanism allows the camera to move horizontally and vertically, giving it a wider field of view. The ESP32 board will connect with the assistance of Wi-Fi. We are utilizing the ESP32 CAM, which will give live video spilling to the website. The insecure setting proves to be helpful for the surveillance rover. This project offers real-time monitoring. It functions in a real-world setting. Our rover, which can be used in day-to-day life. It is a rover that consists Wi-Fi camera module. The primary use of this rover is to monitor an area for a particular distance, which is controlled by a dynamic website (using an IP address).

Key words-ESP32 CAM,Wi-Fi,Servo motor,Surveillance rover,Dynamic Website.

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23.0 APPLICATIONS

This project can be used in various industries,

- Automobile manufacturing industries.
- Small scale industries.
- Inductor coil manufacturing industries.
- Automobile Repair service and repair centres.

24.0 SCOPE OF IMPROVEMENT

- To reduce material wastage.
- Reduce the manufacturing cost per coil.

25.0 CONCLUSION

Thus, we rectified the errors that were faced in the present system and satisfied the customer needs.

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MULTIPLE OBJECT DETECTION AND TRACKING USING DEEP LEARNING

A PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that this project titled "MULTIPLE OBJECT DETECTION AND TRACKING USING DEEP LEARNING" is the bonafide work of **VASIGARAN S - 112419106023 RAKESH S - 112419106014 VIJAY S - 112419106025 DIVYA A - 112419106002** who carried out the project work under my supervision.Certified further that to the best of my knowledge the work reported herein does not form part of any other project work/thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any Other candidate.

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ABSTRACT

Traditional object detection methods are built on handcrafted features and shallow trainable architectures. Their performance easily stagnates by constructing complex ensembles which combine multiple low-level image features with high-level context from object detectors and scene classifiers. With the rapid development in deep learning, more powerful tools, which are able to learn semantic, high-level, deeper features, are introduced to address the problems existing in traditional architectures. The paper presents a novel idea to detect and track the multiple object by using a publicly available image dataset. It is a difficult task to create detection in the dataset because it contains far-exposed images, such as direct sunlight, and the intrinsic features are not very reliable for training. So we propose a pretrained YOLOv4 model to train with, using different loss and regularization methods to increase its base accuracy. And, based on our findings, we propose a solution for dealing with multiple object detection and tracking issues, particularly in real time. These techniques aim to be used in many applications, such as Autonomous Vehicles, and Advanced Driver Assistance Systems (ADAS).

Key words - Multiple object detection,Object tracking,Deep learning,YOLOv4 model,Kalman filter.

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CHAPTER 13

CONCLUSION :

Object detection is a key ability for most computer and robot vision systems. Although great progress has been observed in the last few years and some existing techniques are now part of many consumer electronics (e.g., face detection for auto-focus in smartphones) or have been integrated into assistant driving technologies, we are still far from achieving human-level performance, particularly in terms of open-world learning. Due to its powerful learning ability and advantages in dealing with occlusion, scale transformation, and background switches, deep learning-based object detection has been a research hotspot in recent years. This paper provides a deep learning-based object detection framework that handles different sub-problems, such as occlusion, clutter, and low resolution, with different degrees of the new YOLOv4 model. A kalman filter was also created to track the detected multiple objects. At last, experimental results proved the proposed work provided higher outperformance than existing methods.

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IOT BASED SMART BLOOD BANK MANAGEMENT SYSTEM

A PROJECT REPORT

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ABSTRACT

The unit which administers and manages the requisition is name as a blood bank. The main objectives of the blood banks are providing blood to the patients with minimal blood transfusion error. The blood is very important medical supplies so it should be managed well. As the blood bank management consists of number of manual steps, therefore it will become difficult for the blood bank to provide a high level of accuracy, reliability, automation in blood storage and transfusion process.

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CHAPTER 13

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SURVEILLANCE ROVER WITH PAN TILT MECHANISM USING ESP32 CAM

A PROJECT REPORT

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ABSTRACT

The surveillance rover that will provide live video streaming while moving around the area need to monitor. It will be observed and controlled remotely using straightforward engineering. The web application will have a video screen for observation and catch signals to control the rover and camera. The system uses an ESP32 microcontroller, an ESP32-CAM camera module, and servo motors to achieve a two-axis pan-tilt mechanism for the camera. The pan-tilt mechanism allows the camera to move horizontally and vertically, giving it a wider field of view. The ESP32 board will connect with the assistance of Wi-Fi. We are utilizing the ESP32 CAM, which will give live video spilling to the website. The insecure setting proves to be helpful for the surveillance rover. This project offers real-time monitoring. It functions in a real-world setting. Our rover, which can be used in day-to-day life. It is a rover that consists Wi-Fi camera module. The primary use of this rover is to monitor an area for a particular distance, which is controlled by a dynamic website (using an IP address).

Key words-ESP32 CAM,Wi-Fi,Servo motor,Surveillance rover,Dynamic Website.

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CHAPTER-11

CONCLUSION AND FUTURE ENHANCEMENT

11.1 CONCLUSION:

The surveillance rover using ESP32 with pan-tilt servo is an innovative and practical solution for remote monitoring and surveillance applications. The integration of the ESP32-CAM module, servo motor, L298N motor driver, and other components provides a versatile and customizable platform that can be adapted to various use cases and scenarios.

The ESP32-CAM module provides high-quality imaging and video capabilities, as well as wireless connectivity for remote control and data transmission. The pan-tilt servo allows for precise and flexible positioning of the camera, making it ideal for surveillance applications. The L298N motor driver provides reliable and efficient motor control, enabling the rover to move smoothly and navigate around obstacles.

Overall, the surveillance rover using ESP32 with pan-tilt servo is a promising technology that has a wide range of potential applications in fields such as security, monitoring, and inspection. With further development and refinement, this technology has the potential to revolutionize the way we approach surveillance and remote monitoring in the future.

11.2 FUTURE WORK:

1. Improved navigation: One possible improvement is to integrate the rover with a GPS system or other navigation sensors to improve its accuracy and ability to navigate in different environments.

2. Autonomous operation: Another possible improvement is to add AI algorithms that allow the rover to operate autonomously and perform tasks such as object detection, recognition, and tracking. This could be useful for applications such as surveillance, monitoring, or inspection.

3. Remote control interface: An improved remote control interface could allow users to access and control the rover's functions from a wider range of devices such as laptops, smartphones, or tablets.

4. More powerful motors and batteries: An upgrade to more powerful motors and batteries could increase the rover's speed and range, allowing it to operate for longer periods and cover larger areas.

5. Integration with other systems: The rover could be integrated with other systems such as drones, robots, or security cameras to provide a more comprehensive surveillance or monitoring solution.