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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING MINI PROJECT: SECOND REVIEW

SURVEILLANCE ROBOT USING ESP 32 CAM MODULE



PRESENTED BY:

ADITI DUBEY- 1KS20EC002

GANDHAMANI-1KS20EC030

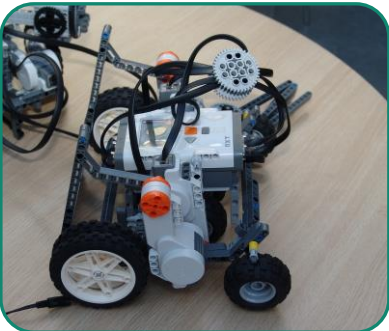
MEGHASHREE- 1KS20EC057

GUIDED BY: Dr. REKHA N

INTRODUCTION



1. WHAT IS A ROBOT?




2. WHAT IS A
SURVEILLANCE ROBOT?

LITERATURE SURVEY

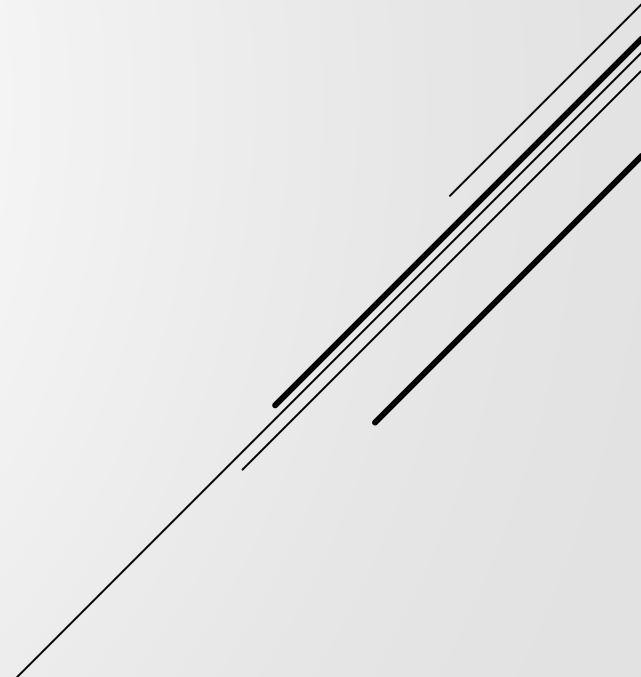
SL NO	AUTHOR NAME	TITLE	ADVANTAGES	CONCLUSION
1	Anand Nayyar , Vikram Puri , Nhu Gia Nguyen and Dac Nhuong Le	Smart Surveillance Robot for Real-Time Monitoring and Control System in Environment and Industrial Applications	provides a wide range of services such as monitoring, manufacturing, security surveillance, and so on in a variety of fields.	The robot is built using an Arduino microcontroller, and a live stream of data in the form of graphs is displayed via ThingSpeak.com.
2	Nihar Ranjan, Zubair Ghouse & Nishika Hiwrale	A Multi-function Robot for Military Application	Using the PIR sensor, it can detect any heat radiations emitted by humans or animals by measuring infrared (IR) light emanating from objects in its range of vision	The robot can be commanded manually, but it may also take preventative measures to defend itself and stay undiscovered
3	Chaitanya Vijaykumar Mahamun and Zuber Mohammed Jalauddi	Intrusion Monitoring in Military Surveillance Applications using Wireless Sensor Networks (WSNs) with Deep Learning for Multiple Object Detection and Tracking	Deep-learning approach based on Convolutional Neural Networks (CNN) for the detection, identification, and tracking of multiple objects produces fair results for all test images with single and multiple objects, as well as different conditions such as daytime, nighttime	The installation results indicate that the PIR Sensor can detect obstacles within its range and that an SMS alert is issued via the GSM module when there is activity

SL NO	AUTHOR NAME	TITLE	ADVANTAGES	CONCLUSION
4.	Nakshtra Popli , Kailash Masiwal, Sarthak Batra and Chaitanya Mamgain	Surveillance Car Bot Future of Surveillance Car Bot	For the agriculture industry, cellular video monitoring via the monitoring Robot Car is far more beneficial than desk-bound surveillance infrastructure. cost-effective	With the advancement of technology in recent years, it is now possible to remotely monitor critical areas using robots rather than humans.
5.	Okey, D.O., Eze, C. and Ihekweaba, C	computer-based wireless camera robot for mobile surveillance	cheap cost when compared to the work of other authors	The major target audience of this project is the army, repair engineers, and parents of children because it may be utilised remotely for monitoring without advanced understanding. Nonetheless, the limits of this work include the Bluetooth coverage range and obstacle avoidance concerns

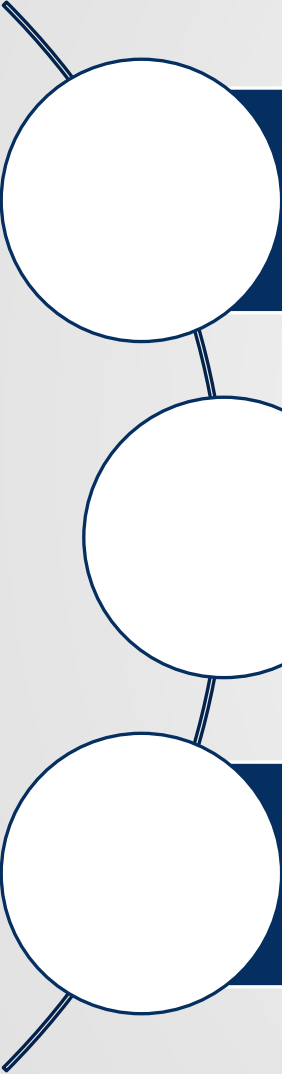
PROBLEM IDENTIFICATIONS



Surveillance
in areas
where
humans
cannot be
present.



OBJECTIVES

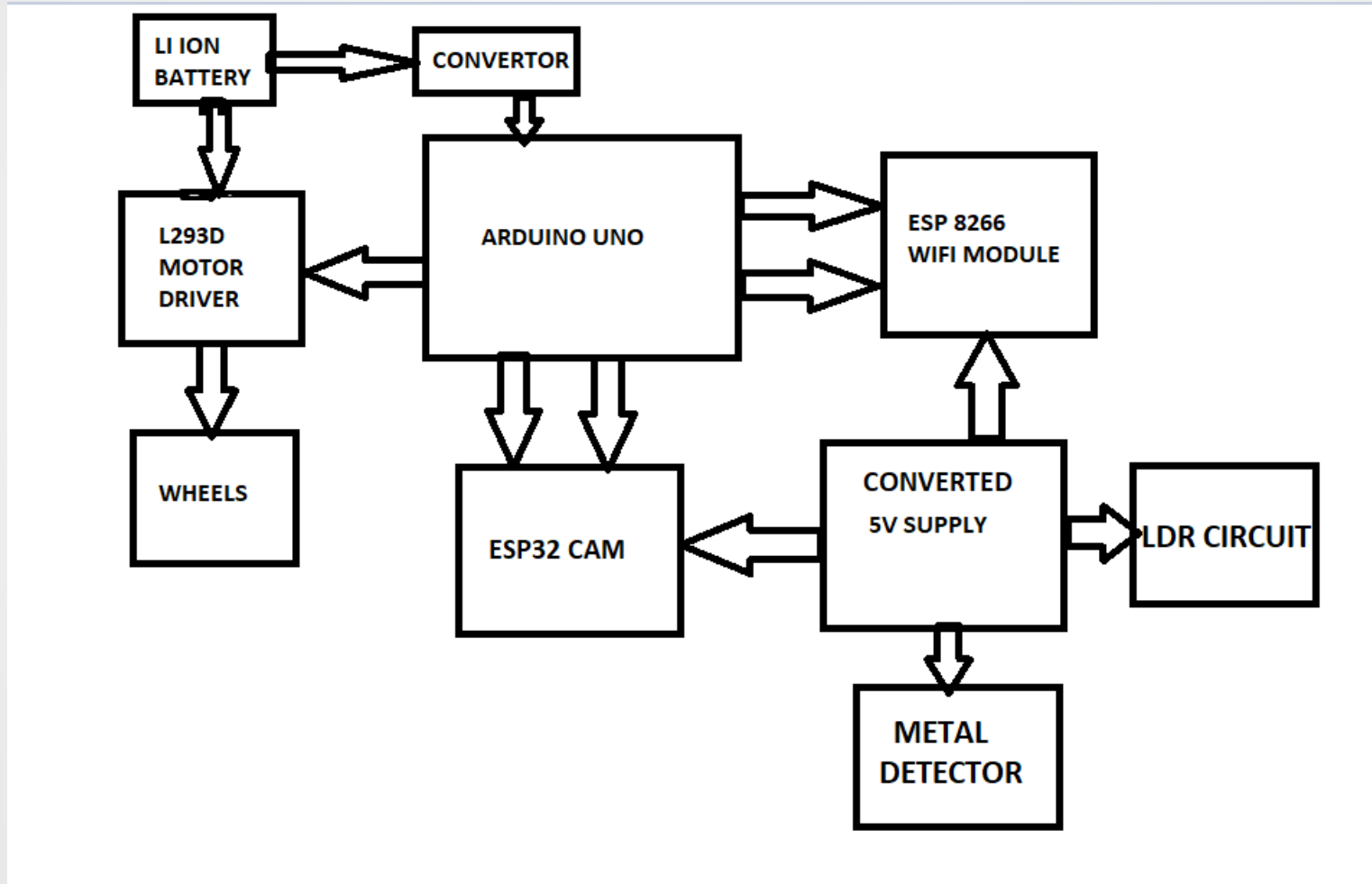


Enable the robot to capture high quality video using ESP32 CAM module's built in camera and stream it in real time to a designated location, such as computer, mobile device and wireless networks.

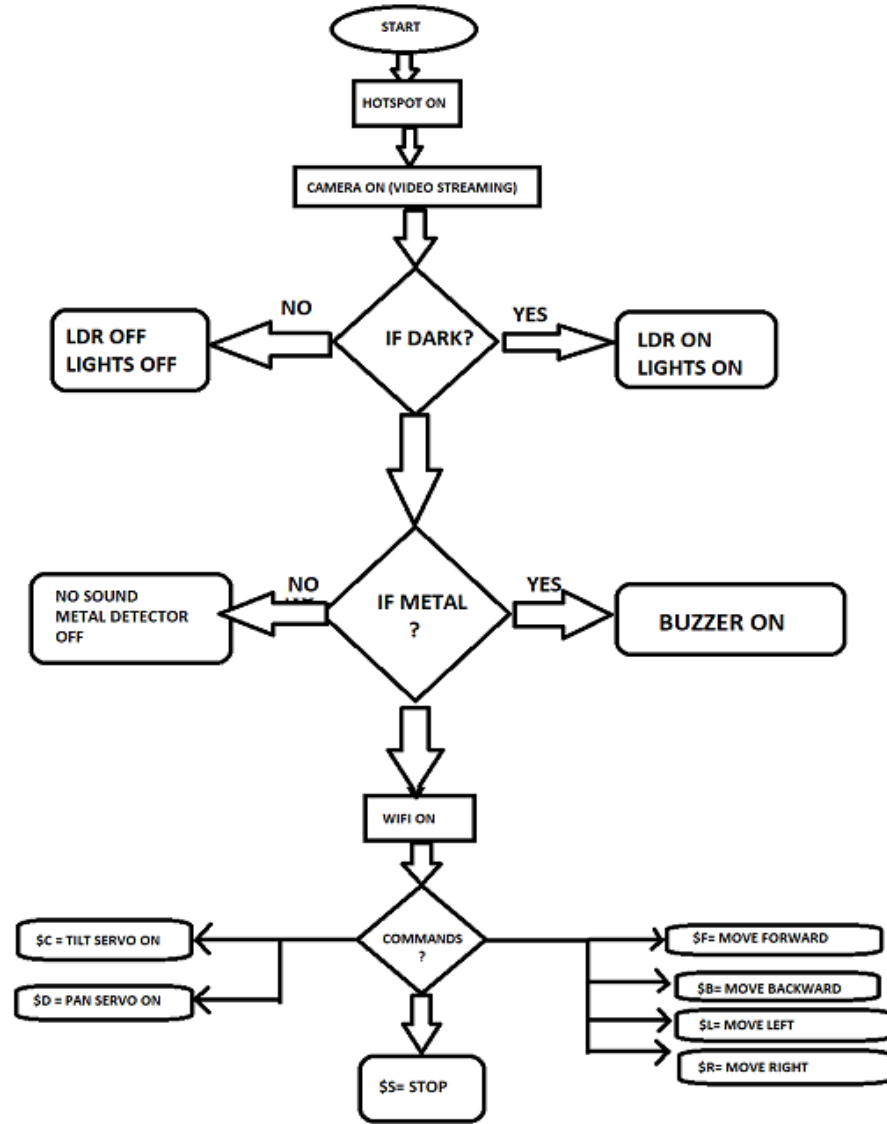
To build a robot which can be controlled by a mobile app.

Equip the robot with Metal detector sensor and LDR sensor.

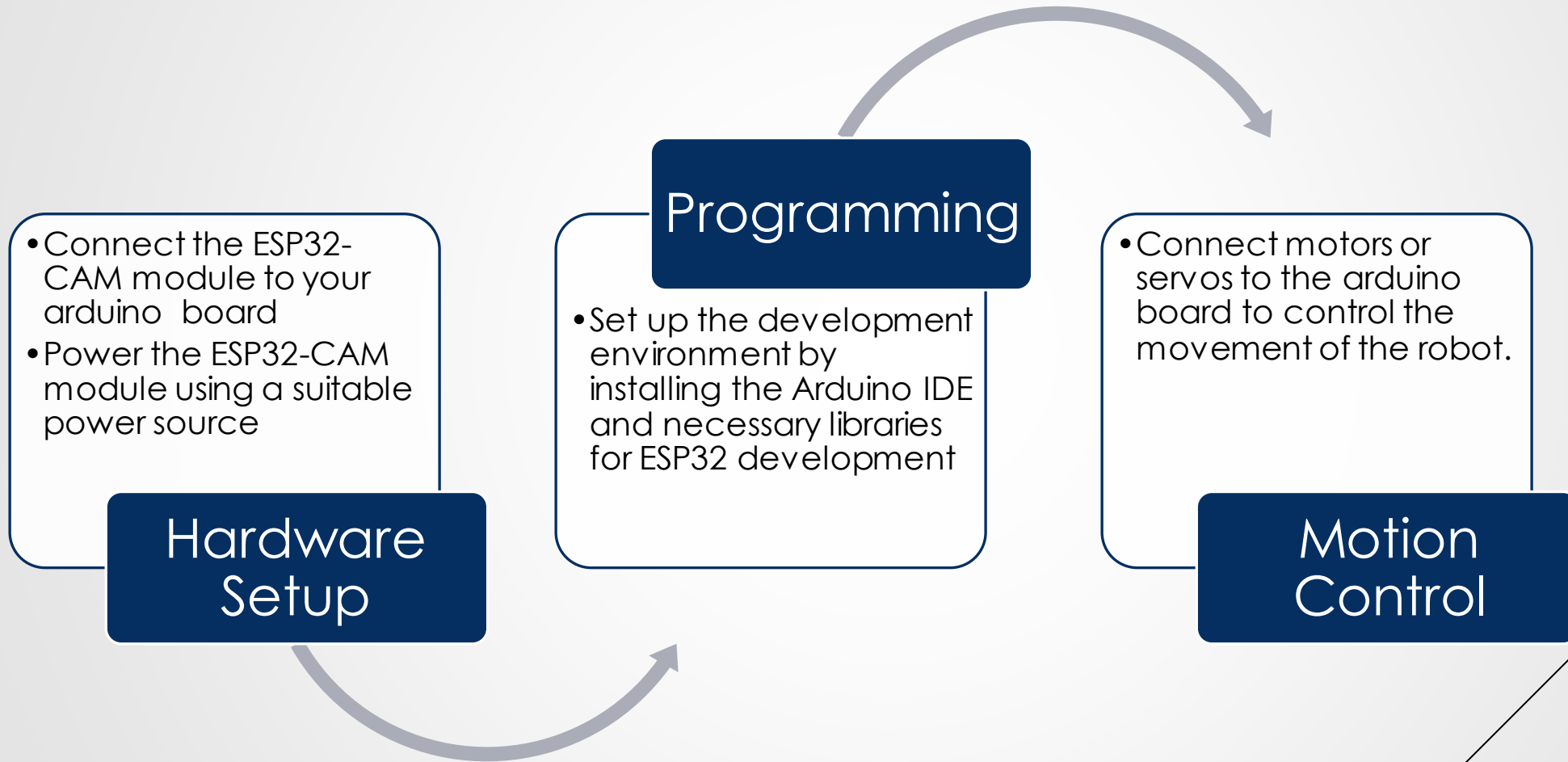
BLOCK DIAGRAM

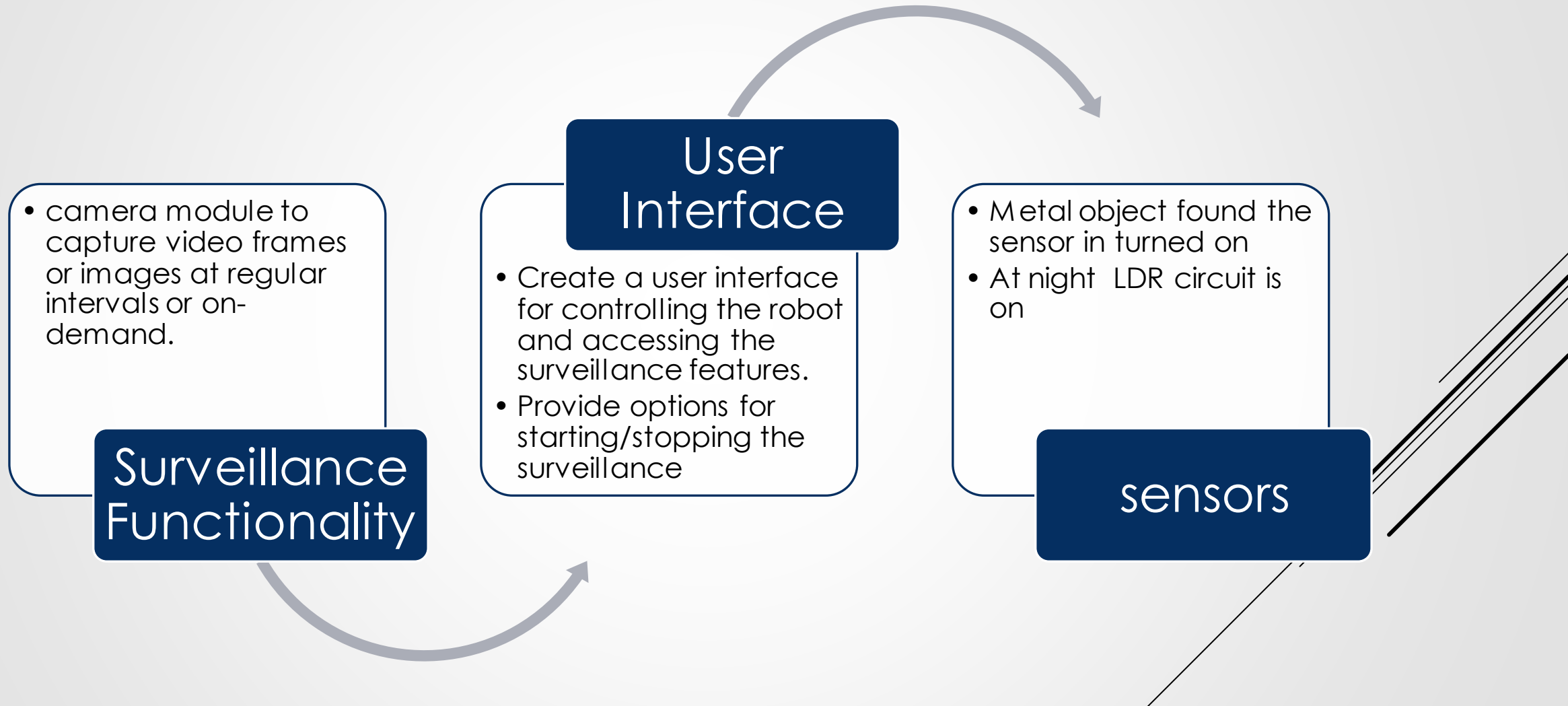


METHODOLOGY

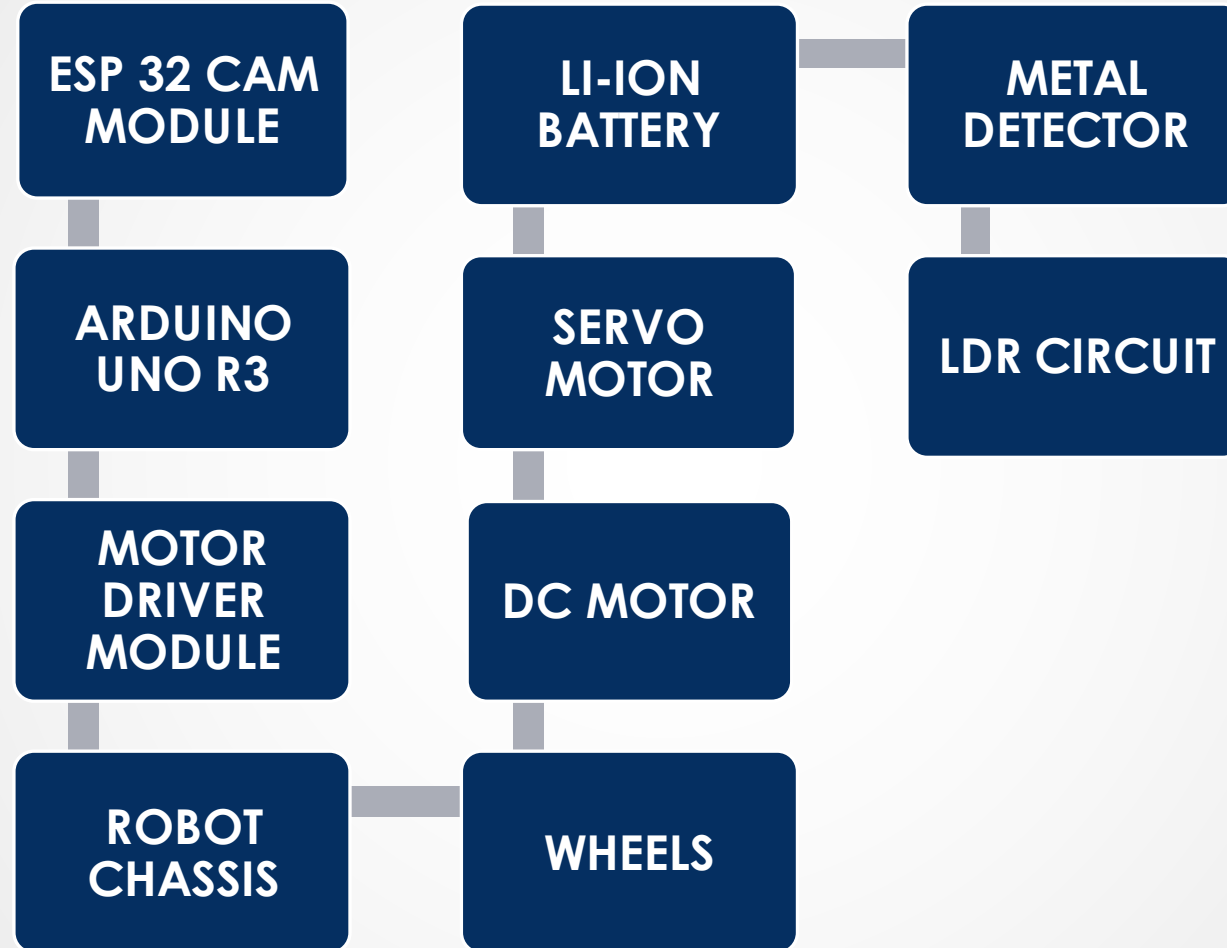


WORKING OF THE PROJECT





HARDWARE COMPONENTS USED:



SOFTWARE COMPONENTS USED:

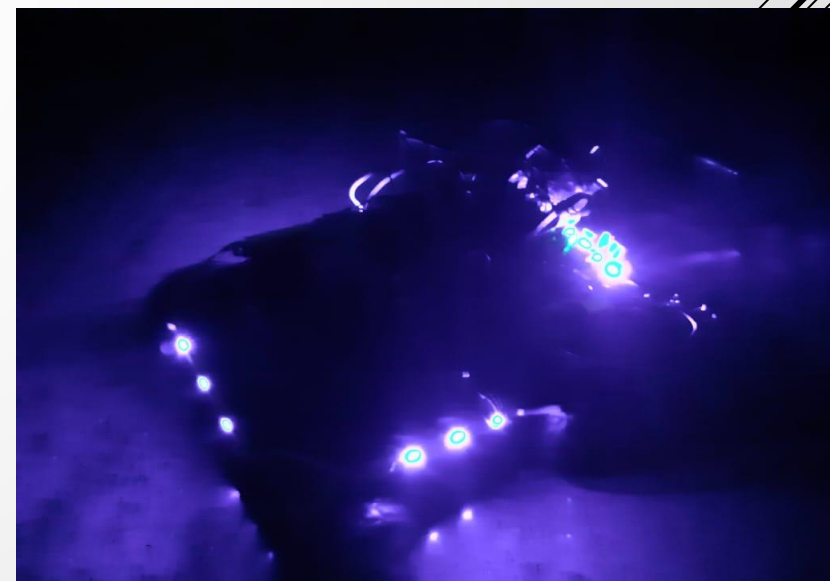
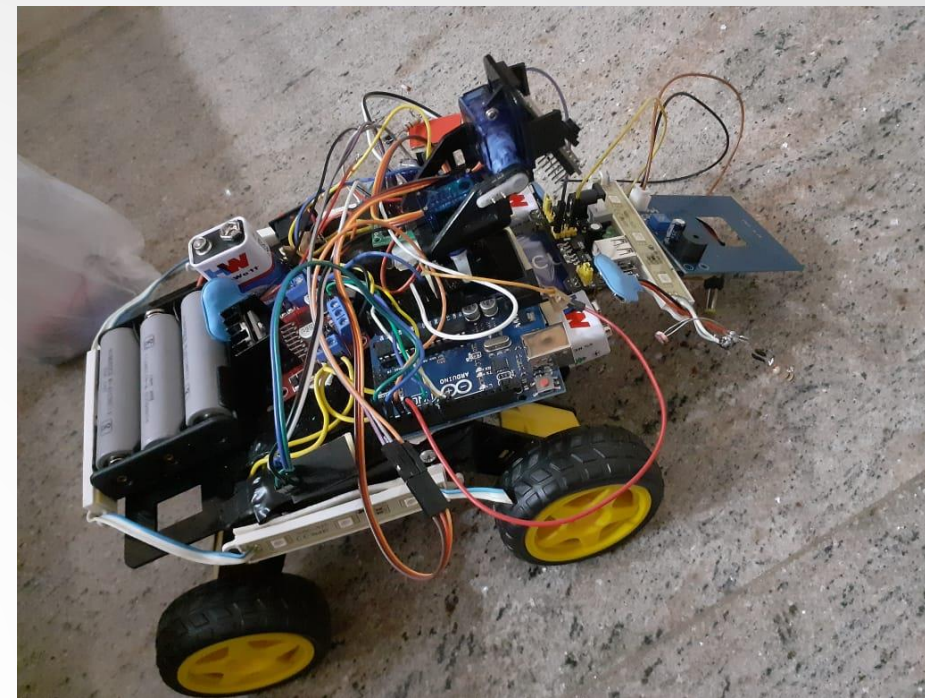
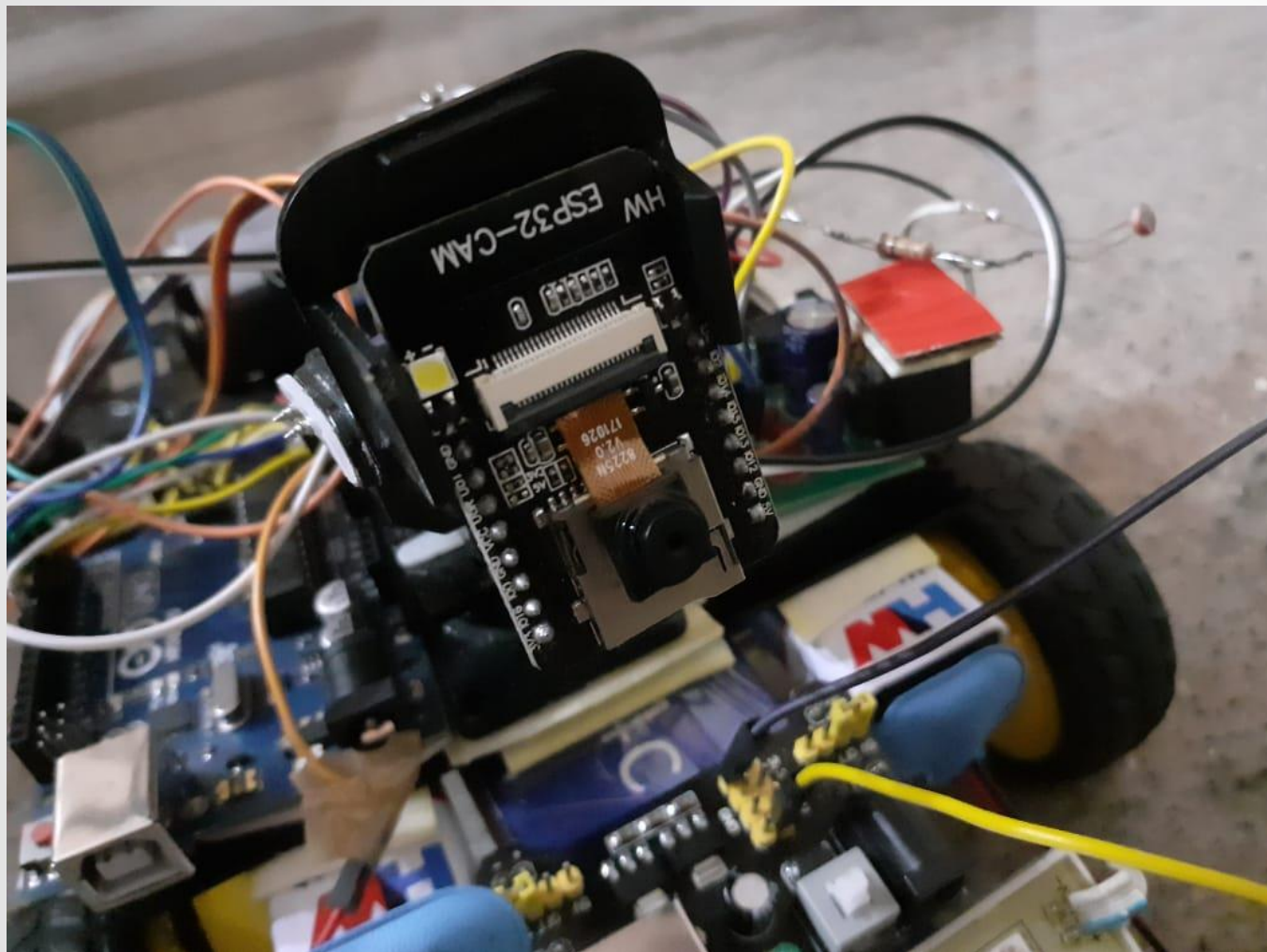
ARDUINO
IDE



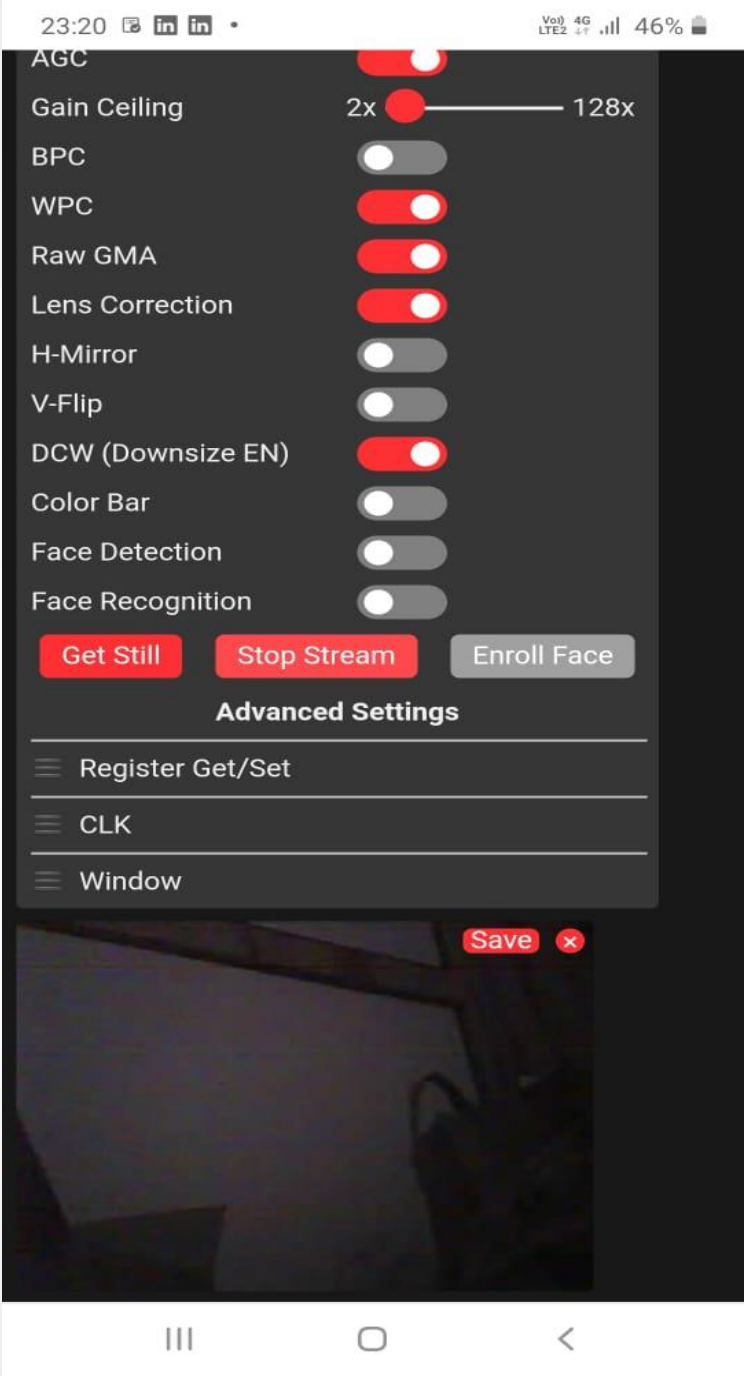
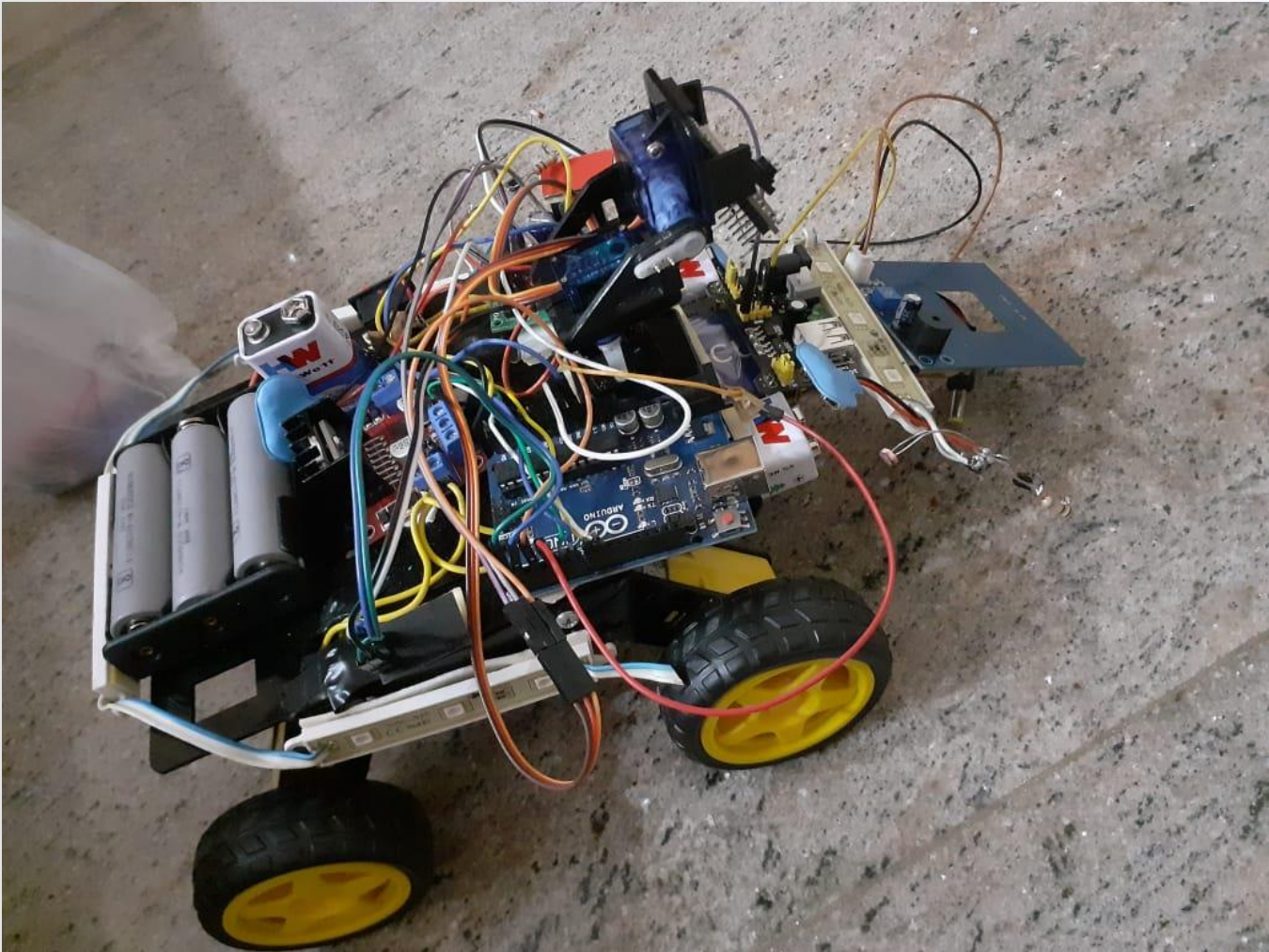
TCP LINK



RESULT



RESULT



APPLICATIONS



**Chemical
Industries**



**Law
Enforcement**



Agriculture



Inspection



**Search and
rescue**



**Environmental
Monitoring**



CONCLUSION

1

- We have successfully implemented the working of the wireless video surveillance robot controlled using android mobile device

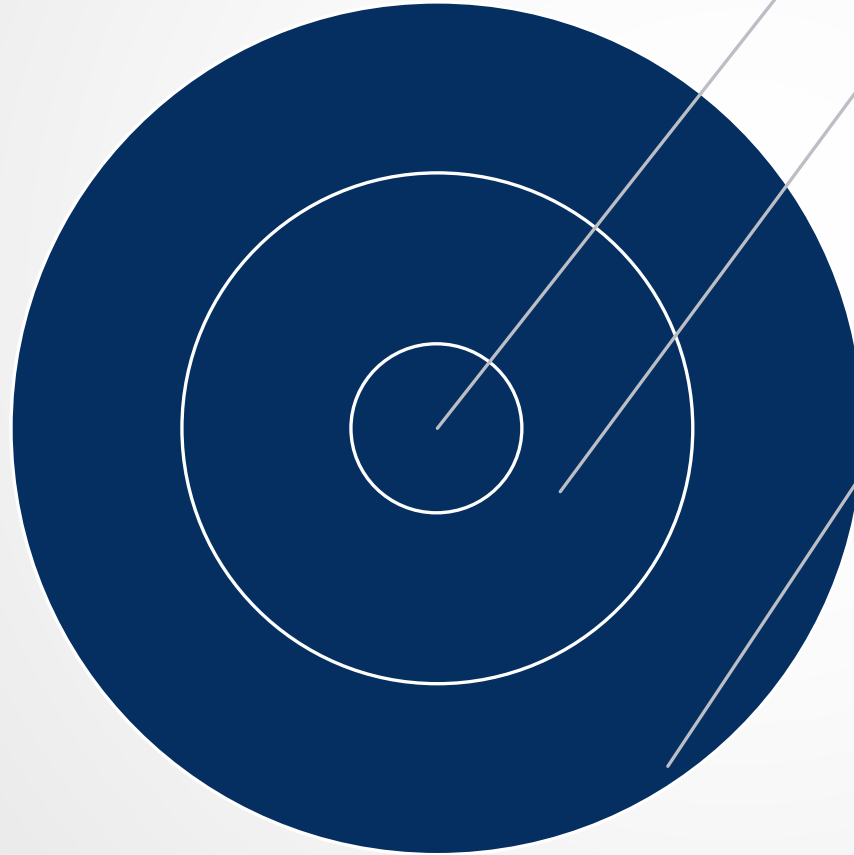
2

- The robot is successfully controlled using the android application through the WiFi technology

3

- The metal detector is able to identify metal objects
- The LDR circuit glows in dark situations

FUTURE SCOPE



**implementing
sensors to sense
more
environmental
factors**

**use of a HD camera
and a more powerful
Micro-computer will
enable the Mobile
Robot to be used in
more challenging
surveillance and
monitoring tasks.**

**using real time
object detection to
identify the object
in front of the robot
by training the
robot using AI**



PROJECT PLAN

SL NO	WORK	WEEK NUMBER
1.	Planning and research	Week 4
2.	Collecting components	Week 5
3.	Testing Components	Week 6-8
4.	Testing algorithm	Week 9-10
5.	Building the robot body	Week 11-15
6.	Partial output	Week 16-20
7.	Final output	Week 21-25

PROJECT DEMONSTRATION

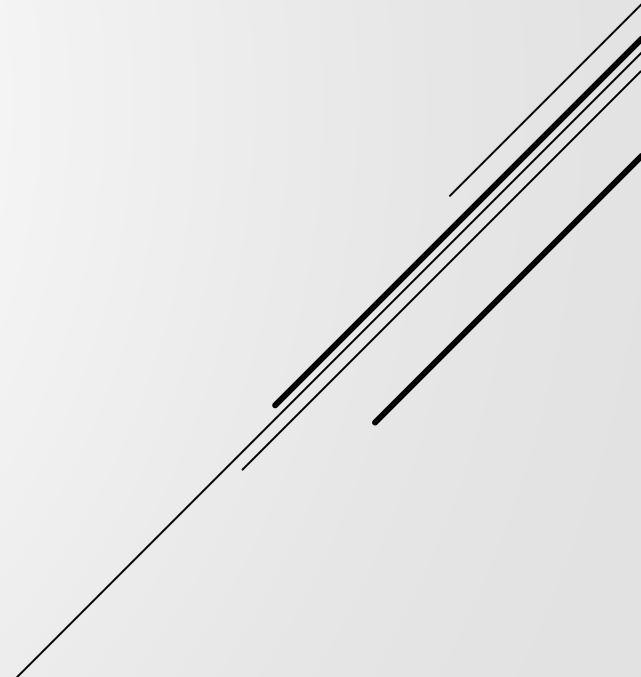


INDIVIDUAL AND TEAM CONTRIBUTION

NAME	CONTRIBUTION
ADITI DUBEY	To establish connection between esp32 cam module and servo motors and making the report for the project
GANDHAMANI CM	To establish connection between LDR circuit and working of metal detector sensor and making the ppt for the project
MEGHASHREE M	To establish connection between the motor driver module and DC motors and assembling the robot

IMPLEMENTATION PAPER DETAILS

[IARJSET.2023.10662.pdf](#)



REFERENCES:

- ▶ Nayyar, A., Puri, V., Nguyen, N. G., & Le, D. N. (2018). Smart surveillance robot for real-time monitoring and control system in environment and industrial applications. In *Information Systems Design and Intelligent Applications: Proceedings of Fourth International Conference INDIA 2017* (pp. 229-243). Springer Singapore.
- ▶ Ranjan, N., Ghose, Z., & Hiwrale, N. (2017). A multi-function robot for military application. *Imperial Journal of Interdisciplinary Research (IJIR)*, 3(3), 1785-1788.
- ▶ Mahamuni, C. V., & Jalauddin, Z. M. (2021, December). Intrusion monitoring in military surveillance applications using wireless sensor networks (WSNs) with deep learning for multiple object detection and tracking. In *2021 International Conference on Control, Automation, Power and Signal Processing (CAPS)* (pp. 1-6). IEEE.
- ▶ Popli, Nakshtra, Kailash Masiwal, Sarthak Batra, and Chaitanya Mangain. "Surveillance Car Bot Future of Surveillance Car Bot." Research gate.
- ▶ Okey, D.O., Eze, C. and Ihekweaba, C, computer-based wireless camera robot for mobile surveillance Research gate.

THANK YOU

