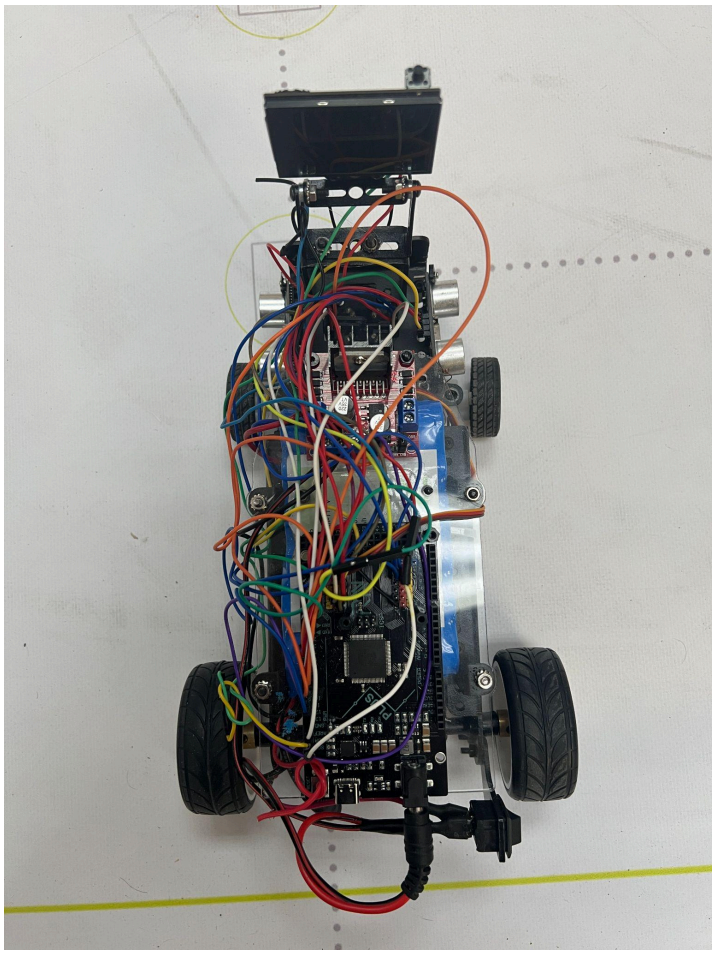
SAUDI EAGLES

Report About Our Robot



Saudi Eagles

Description

Since we started **Saudi Eagles**, We have had one goal in our minds. To combine a single vehicle with the capabilities of being mechanical, electrical and powered by artificial intelligence all together.

We put in the effort, kept trying, and eventually we were able to make it as autonomous and efficient as possible by selecting the right parts for our car.

The hardest challenge was figuring out how to get all of these elements to interact harmoniously without changing any dynamics.

We are dealing with a car that was constructed using a lightweight aluminum body, a 12V rechargeable lithium battery, a board compatible with Arduino, a separate motor drive control, three ultrasonic sensors for measuring distance from three directions, a color sensor to detect colors on the mattress, an artificial intelligence camera with multiple programs, color and object recognition, an interactive screen for displaying the camera view, a servo motor for steering to control the robot's direction, a differential mechanism to transfer power from one motor to two wheels, wide rubber wheels and motors running at 300 rpm.
We were extra careful when we were writing our code, going over each and every line to make sure there were no mistakes or software flaws. We had to make sure that this was not by chance, so we created two codes and tested our car multiple times to make sure our work was precise.

Ultrasonic sensor US - 100

An ultrasonic sensor is a device that uses ultrasonic sound waves to detect the distance to an object, such as the walls or pillars. An ultrasonic sensor transmits and receives ultrasonic pulses using a transducer to determine the proximity of an item. We put two ultrasonics, one on the left and the second one on the right of our car, Then programmed them to detect and bypass objects.

RNAI Arduino Mega 2560

A microcontroller board based on the ATmega2560 is called the Arduino Mega 2560. There are sixteen analog inputs, sixteen digital input/output pins (15 of which can be utilized as PWM outputs), four hardware serial ports, sixteen USB ports, an ICSP header, a power jack, and a reset button.

Servo MG995

Several radio-controlled vehicles, including cars, helicopters, and aircraft, use the high-velocity MG995 Metal Gear Servo Motor. It can rotate 180 degrees, or 60 degrees in each direction. Delivered are 10 kg/cm at 4.8 V and 12 kg/cm at 6 V. PWM signals are processed and received by this digital servo motor more rapidly and effectively.

DC Motor 12V 1200 RPM

The most prevalent kind of motors are direct current (DC) motors. One positive lead and one negative lead are commonly found in DC motors. The motor will start if you connect these two lines straight to a battery. The motor will turn the other way if the leads are switched.

The L298N Motor Driver

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Batteries

We used (6) lithium 12-volt batteries

HuskyLens AI Camera

A simple-to-use AI camera is HuskyLens. With a single click, it can be trained to identify objects, faces, and colors. As it learns more, its intellect increases. HuskyLens can detect faces at a rate of thirty frames per second because to the application of cutting-edge AI technology. With HuskyLens, you can connect to Arduino, Raspberry Pi, LattePanda, or micro:bit and create very creative projects without worrying about complex algorithms. HuskyLens aims to be the most straightforward AI camera. Numerous image processing methods are already included. You may switch between the methods by pressing buttons, and it can recognize and pick up new objects from photos. HuskyLens also has a 2.0-inch display, so you get exactly what you see.

Future Engineers Rules

https://www.wrosaudi.com/public/uploads/competions/files/competion_file_en_1095060983.pdf

Our Socials

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YouTube Channel Link

https://www.youtube.com/@saudieagles24

Team Members

Sara AlKhuzayim
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Team Coach

Malak AlSalem

About Us

Our team is aspiring to compete in the nationals and to continue representing our nation in future competitions.


HUAWEI
RN Ai
FACE RECOGNITION
LINE TRACKING
OBJECT TRACKING
TAG RECOGNITION
COLOR RECOGNITION
The Most Complete Kit
UNO R3 Project