Robot Mecha-Galicia-01

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PURPOSE OF THE ROBOT

The Mecha-Galicia-01 is a teleoperated car that was created with the purpose of being controlled by the movement of a hand remotely.
It can be used to automate different processes in the industry.

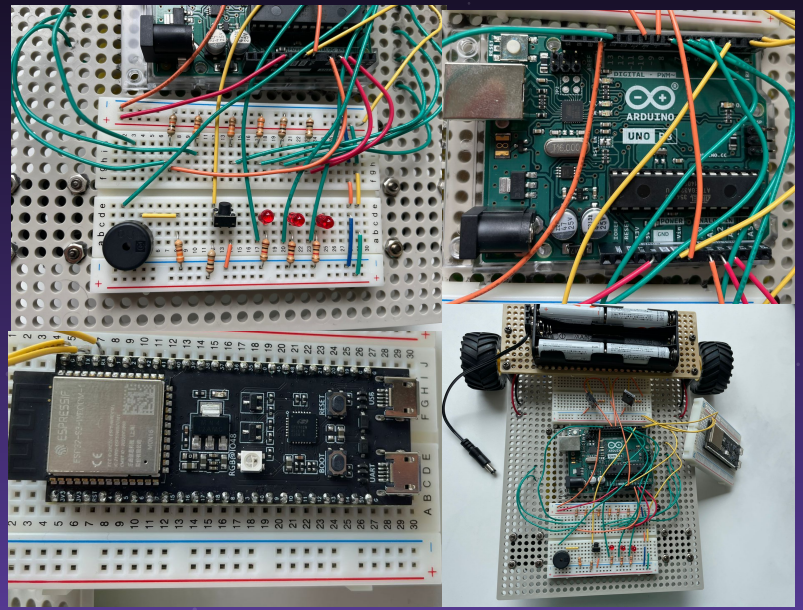
Every pose of the hand is going to send a request to the robot, in this case the requests are: move forward, left, right or regulate its velocity.

It can be controlled by using a web page that activates the webcam and allows the user to control the Mecha-Galicia-01.

WIRING AND ELECTRONICS

Electronic Components

- Arduino UNO
- ESP32-S3
- Buzzer
- LEDS
- Resistors (10kΩ, 330Ω, 4.7Ω, 1kΩ)
- Transistors D1415
- Tamiya No.203 eco-motor gearbox



PROGRAMMING LANGUAGES

- Python
- C
- Java script
- C++

SOFTWARE USED

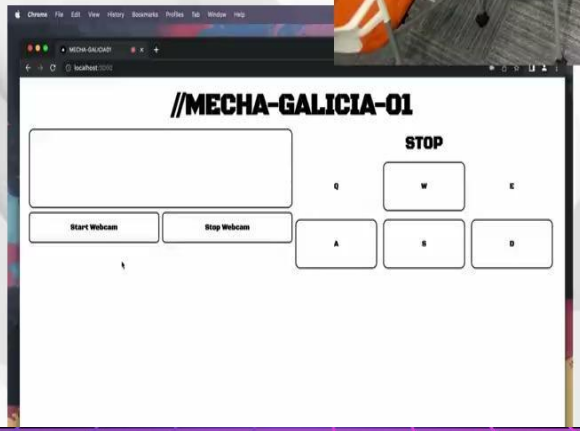
- Arduino
- Mediapipe
- OpenCV
- React

CHALLENGES OF THE PROJECT

System Interconnection

For us, the most challenging part was to interconnect all the electronics components of the robot. For example, the transmission from the computer to the ESP32, and then, the serial transmission from the ESP32 to the Arduino UNO.

DEMONSTRATION



CONCLUSIONS

In the current world, learning about robotics is really important because it can help us to automate processes in the industry.

In this case, this robot can develop many tasks for its user, while the user is only operating it remotely with one hand.