**🧾 🎯 Project Title: WIRELESS CONTROLLED ROBOT BASED ON THE ARDUINO PLATFORM  
📅 Project Timeline: August 2018 – August 2019**  
🎥 YouTube Demo: Not available  
📦 GitHub Source Code: <https://github.com/IvanSicaja/2018.08.01_GitHub_Wireless-Controlled-Robot-Based-on-the-Arduino-Platform>   
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🏷️ My Personal Profiles: ⬇︎  
🎥 Video Portfolio: To be added  
📦 GitHub Profile: <https://github.com/IvanSicaja>  
🔗 LinkedIn: <https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222>  
🎥 YouTube: <https://www.youtube.com/@ivan_sicaja>  
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### 📚🔍 Project description: ⬇︎⬇︎⬇︎

### 💡 App Purpose

One year spent on developing the **WIRELESS CONTROLLED ROBOT BASED ON THE ARDUINO PLATFORM** project, and finally, the work was completed successfully.  
The robot has **automatic obstacle avoidance** ability and can also be **controlled with an Android app** that communicates via the **Wi-Fi protocol**.  
We developed this **custom Android app** specifically for the project.

**🧠 How It Works**

The brain of the robot is an **ESP-32 microcontroller** with a built-in **Wi-Fi module**.

**Hardware Components:**

* **1x Servo motor SG90**
* **1x Ultrasonic sensor HC-SR04**
* **4x DC motors**
* **1x Motor driver L298N (model X)**
* **1x Three-digit 7-segment LED display (built-in voltmeter)**
* **2x 18650 Li-ion 2600 mAh batteries**

A detailed explanation of the project and the full **Arduino source code** is written in the **final work document** “Wireless controlled robot based on the arduino platform.pdf “, attached in repository.

* The **ESP-32** establishes a **Wi-Fi Access Point** and hosts a **web server**.
* The **Android app** sends commands to the robot through the Wi-Fi connection.
* The **L298N motor driver** controls the four DC motors for **movement in all directions**.
* The **HC-SR04 ultrasonic sensor**, mounted on the **SG90 servo motor**, scans the environment to measure distances and detect obstacles.
* The robot executes **obstacle avoidance behavior** by analyzing sensor readings at different angles.
* Real-time feedback is displayed on the **7-segment LED voltmeter**.

### ⚠️ Note

Special thanks to **Mirko Pezo** for his exceptional contribution to the development of this project.

### 🔧 Tech Stack

**Arduino IDE, ESP-32, MIT App Inventor, C/C++, Wi-Fi Communication, PlatformIO, VS Code, Software Development, Hardware Design, Research & Development, Soldering, Diagnostics, Assembly, Testing, 3D Printing, CNC, PCB Design & Manufacturing, Power Distribution Management, Sensor Fusion, Architecture Selection, Team Collaboration, Robotics**

### 📣 Hashtags Section

**# #robotics #mobilerobotics #arduino #esp32 #obstacleavoidance #androidapp #MITAppInventor #c++ #wirelesscommunication #electronics #architecturedesign #platformio #vscode #soldering #electricaldiagnostics #softwaredevelopment #hardwaredesign #R&D #assembly #testing #3dprinting #cnc #PCBdesign #powerdistribution #sensorfusion #collaboration**