# ✅ Case Study: Line Following Robot with Obstacle Avoidance

## 🗓️ Duration

From: May 2, 2025  
To: May 3, 2025  
(Duration: 2 Days)

## 📥 How the Collaboration Started

The client reached out to me through LinkedIn, interested in my embedded systems projects. He wanted my help with his college project: a robot car that can follow a line and avoid obstacles. We connected on WhatsApp, discussed project scope, cost, and timeline, and quickly reached an agreement.

## 🛠️ Project Details

• Project Type: Line Following Robot with Obstacle Avoidance  
• Services Provided:  
- Designed full circuit diagrams (motors, IR sensors, ultrasonic sensor, Arduino wiring).  
- Wrote Arduino code to control both line following and obstacle avoidance behaviors.  
- Delivered active TinkerCAD links for online testing and simulation.  
- Provided support for practical wiring and real-world implementation.

## 💰 Cost

• Agreed Price: 1200 EGP  
• Payment: Completed via transfer; full amount received.

## 💬 Communication with Client

• Client said:  
"Engineer, this is exactly what we needed. The robot is following the line and avoiding obstacles smoothly. Thanks for your quick work!"  
• My reply:  
"I’m really glad it worked out perfectly! Let me know if you need help with final testing or assembly."

## 📸 Sample Work

• Sent working TinkerCAD simulation links for client testing.  
• Provided clear and well-organized circuit diagrams.  
• Delivered Arduino code files with comments for easy understanding and modification.

## 🏅 Result

• The client successfully completed his college project using the provided designs and code.  
• Robot car performed well in both line following and obstacle avoidance tasks.  
• Client expressed full satisfaction with the quality and speed of delivery.  
• This project added to my experience in building autonomous robots with Arduino.