**Robot car 003**

**Modes**

1. Bluetooth mobile app control
2. IR remote control
3. Hand following
4. Collision avoidance
5. Line following

**Hardware**

1. Ultrasonic Sensor (SR-04) - 1x
2. Raspberry pi pico - 1x
3. Line following module (Ky-033) - 3x
4. IR emitter and receiver - 2x
5. MX 1508 dual motor driver module - 2x
6. 4 wheeled car chassis (with mechanum wheels) - 1x
7. Geared motors - 4x
8. Bluetooth module (JDY-31) - 1x
9. Button - 1x
10. 18650 batteries - 3x
11. 18650 battery pack - 1x
12. SSD1306 OLED Display module
13. SG90 360degrees servo motor - 1x
14. Jumper wires
15. Perforated board

**Software**

1. Arduino IDE
2. MIT app inventor 2

**Programming Language:** Micropython

**Lessons learned from challenges**

* When using perforated boards, always test each component one by one before completing the design
* The raspberry pi pico has 8 PWM slices with 2 channels each. If there's a need to use more PWM outputs on more than 8 pins, ensure that the chosen pin doesn’t use same channel that’s already used by one of your other pins
* Always read documentation
* A technique called debouncing helps resolve the button issue. Similar to the method I used on the Arduino based version of this project
* I didn’t end up using the Infrared receiver with IR remote control because I couldn’t find a way to hand over control to the IR mode after successfully reading the input from the remote. I should read further on the NEC\_8 python IR library

