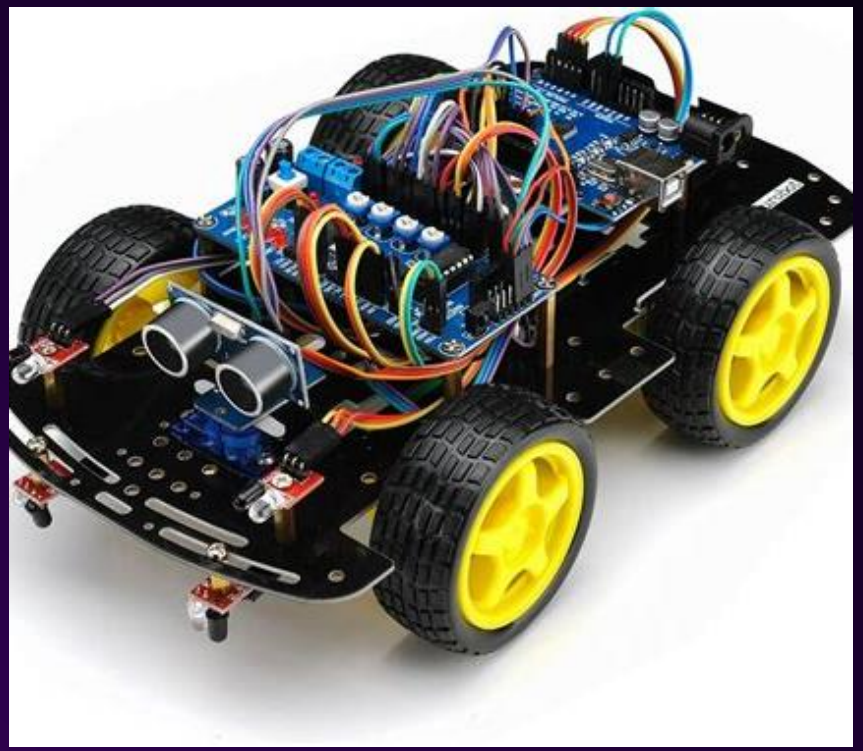
CAMROTO

YOUSSEF MOHAMED AMINE
G2

SOMMAIRE

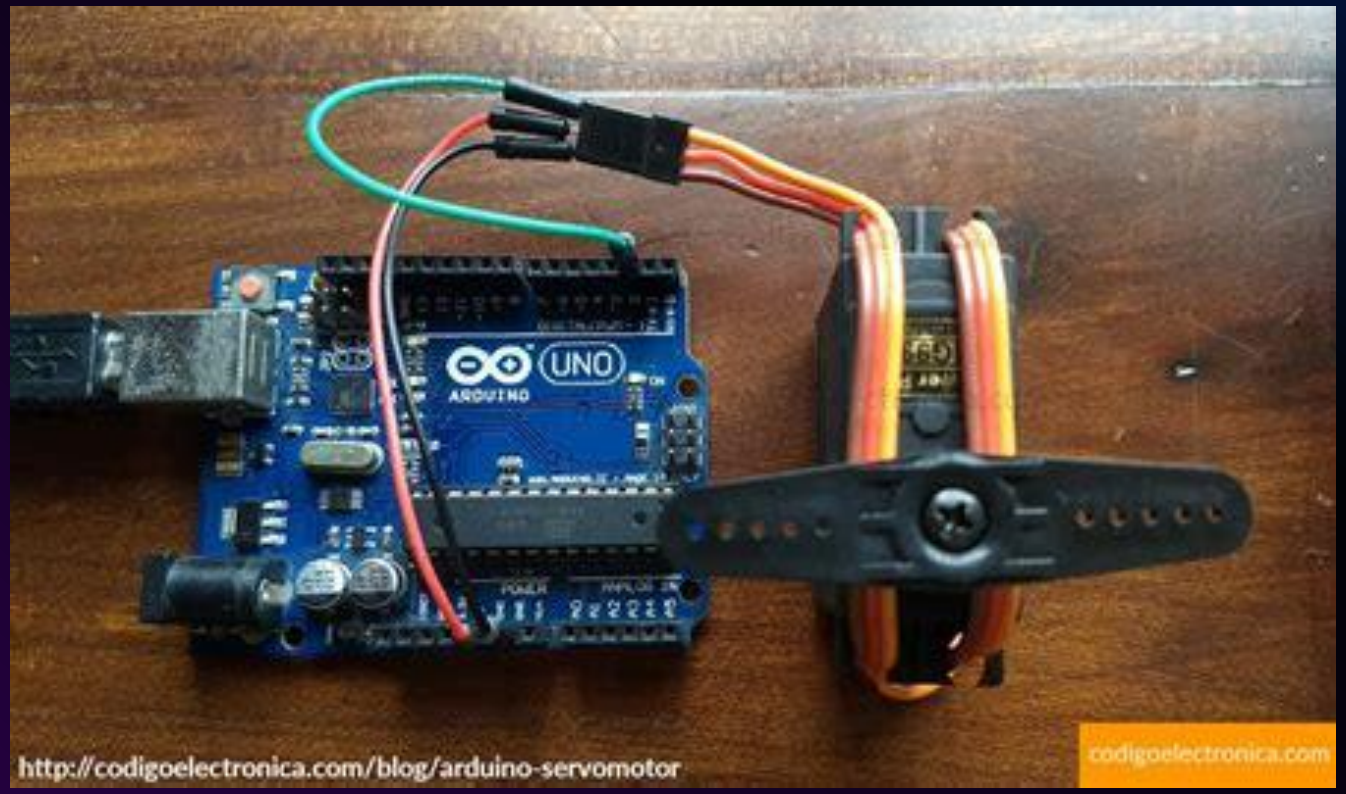
RAPPEL DU PROJET/CHANGEMENT

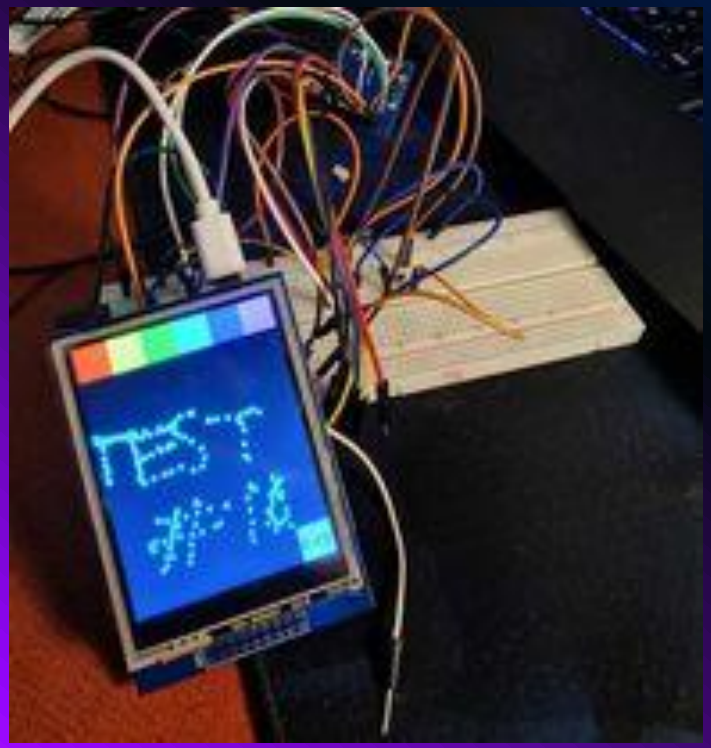


une petite voiture capable de se déplacer de manière autonome tout en capturant des images avec une caméra Arduino intégrée

RAPPEL DU PROJET/CHANGEMENT

un système mettant en vedette un servomoteur qui permet à la caméra Arduino de pivoter pour capturer des images dans différentes directions.





MONTAGE/COMPOSANTS

ECRAN

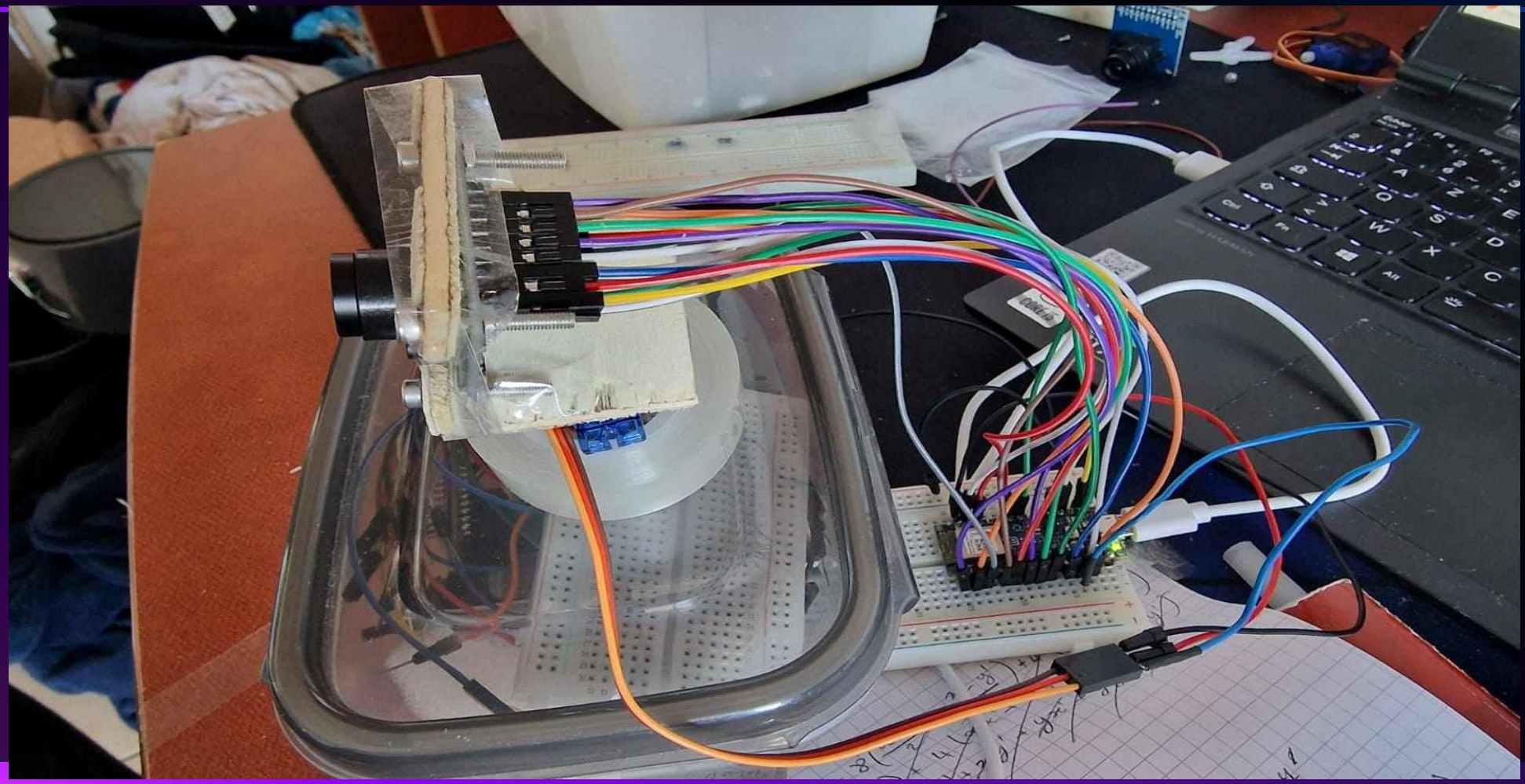
INTÉGRATION D'UN ÉCRAN TFT ARDUINO DANS NOTRE SYSTÈME, BIEN QU'IL NE FONCTIONNE PAS ENCORE AVEC LES AUTRES COMPOSANTS.

MONTAGE/COMPOSANTS

- CAMERA OV7670
- LA CARTE ARDUINO NANO 33
- SERVOMOTOR.

```
Circuit:
  - Arduino Nano 33 BLE board
  - OV7670 camera module:
    - 3.3 connected to 3.3
    - GND connected GND
    - SIOC connected to A5
    - SIOD connected to A4
    - VSYNC connected to 8
    - HREF connected to A1
    - PCLK connected to A0
    - XCLK connected to 9
    - D7 connected to 4
    - D6 connected to 6
    - D5 connected to 5
    - D4 connected to 3
    - D3 connected to 2
    - D2 connected to 0 / RX
    - D1 connected to 1 / TX
    - D0 connected to 10

This example code is in the public domain.
```

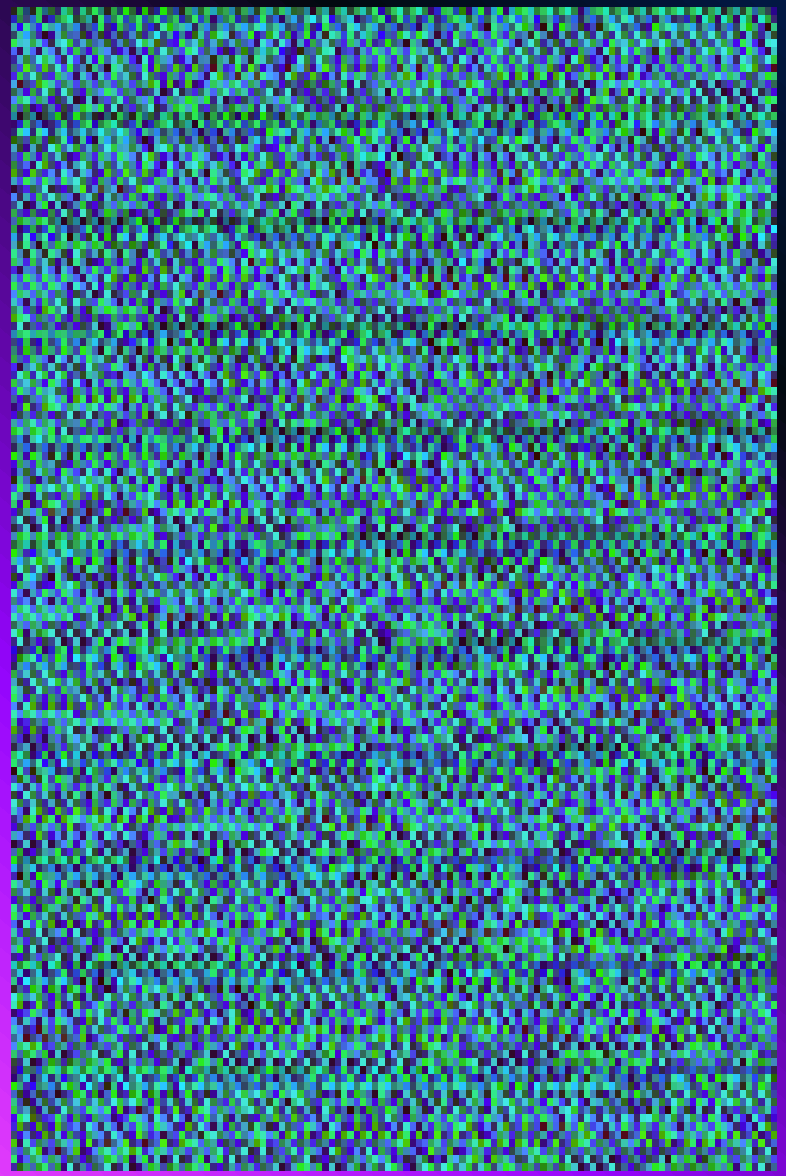
BRANCHEMENT FINAL

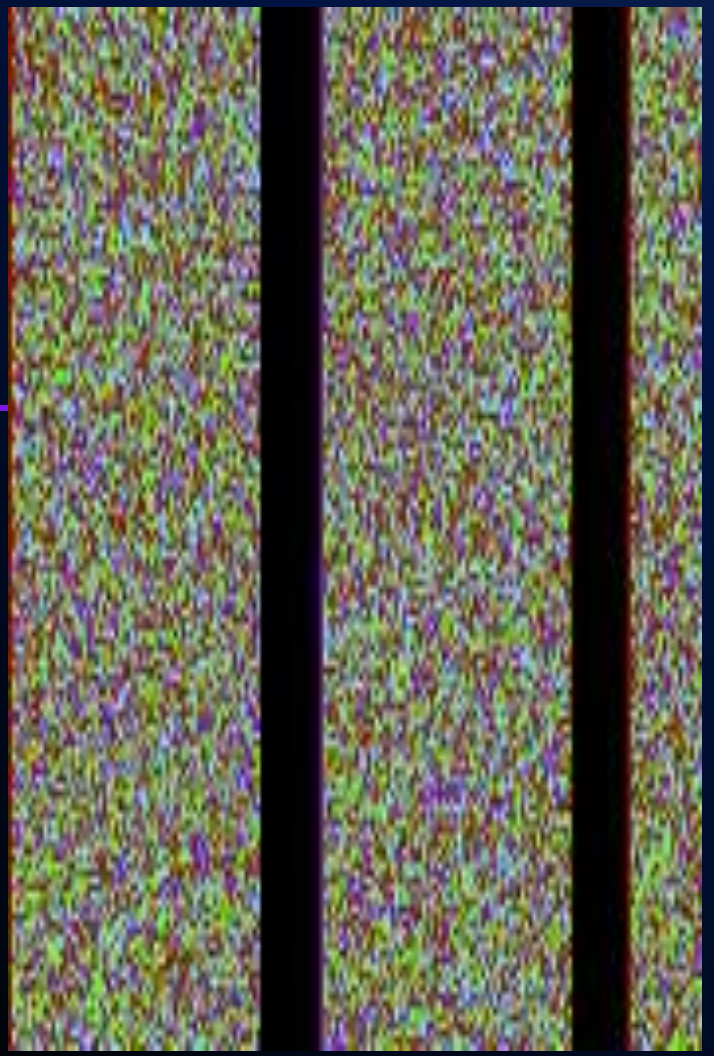


```python
from PIL import Image

def rgb565_to_rgb888(pixel):
    r5 = (pixel >> 11) & 0x1F
    g6 = (pixel >> 5) & 0x3F
    b5 = pixel & 0x1F

    return ((r5 << 3) | (r5 >> 2), (g6 << 2) | (g6 >> 4), (b5 << 3) | (b5 >> 2))

def extract_data(filename):
    with open(filename, 'rb') as file:
        data = file.read()
        extracted_data = [int.from_bytes(data[i:i+2], byteorder='little') for i in range(0, len(data), 2)]
        return extracted_data

width = 176
height = 144

data = extract_data("pic_4.txt")

img = Image.new( 'RGB', (width,height), "black")
pixels = img.load()
for i in range(img.size[0]):
    for j in range(img.size[1]):
        p = rgb565_to_rgb888(data[i * img.size[1] + j])
        pixels[i,j] = (p[0], p[1], p[2])

img.show()
```

CODE

EXP DE CODE PYTHON POUR LA CONVERSION D'IMAGE





CONCLUSION

Experience enrichissante

Des plans pour l'avenir