Trash Object Detection STM32N6570-DK

Overview

This is a project with a camera that do object detection based on a model trained with trash object. Model trained using YOLOv5 and have been tested on some object to do the work. The original model was meant to be used in dark lighting and various lighting. The plan is to use the same model but on a microcontroller.

Original Model Result

The trained model is then deployed on the microcontroller. The microcontroller using the STN32N650 Development Kit equipped with Neural ART Accelerator. It is programmed using the STM32 HAL driver and mikro T Kernel 3.0. The program is based on the example project from mikro T kernel and the STM32N6 introduction project.

The model is converted to tflite model. ST Edge AI used to convert the model into a neural network c file and hex file to deploy on the microcontroller.

The program here stull unproper , that needs to be updated to get working properly in the future

Operation Manual

- Build the program using the stm32cube ide.
- Setup the debug configuration
- Set the board in development mode
- Start debug the First stage boot loader.
- Flash the Network data hex file , model used for the program
- Run the board