

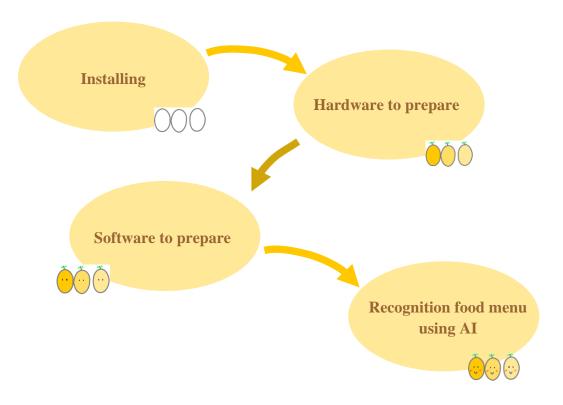
GR-MANGO Al Beginner's Guide

目次

1.	Introduction	2
2.	Installing	3
2	.1 Installing e ² studio integrated development environment	3
3.	Hardware to prepare	4
4.	Software to prepare	8
4	.1 Setting procedure e2 studio	8
5.	Demonstration overview of recognition of food menus using AI	13
6.	Recognition food menu using AI	14

1. Introduction

This document describes the procedure to recognize food menu of color images using Ai on GR-MANGO.



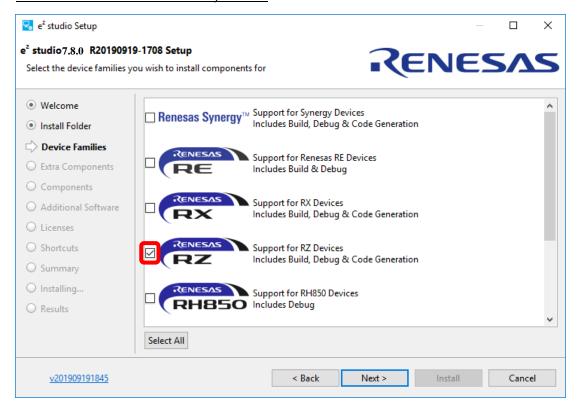
2. Installing

2.1 Installing e²studio integrated development environment

Please download e²studio integrated development environment and instration. https://www.renesas.com/us/en/document/esw/e-studio-v780-installer-offline-installer

Describes the installation procedure.

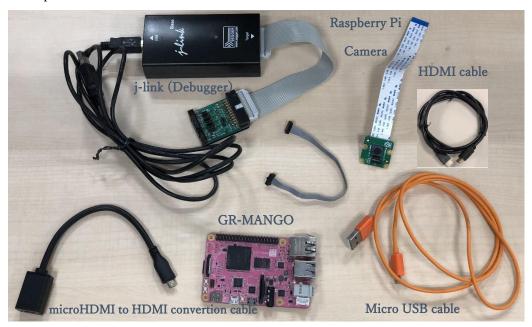
- Double-click "setup e2_studio_7_8_0.exe".
- 2. Follow the instructions of the installer.
- 3. Select the "RZ" for "Device Familly" below.



4. Follow the instructions of the installer.

3. Hardware to prepare

1. Prepare what to use.





food or picture of food



Potate, donuts, edamame... 15types

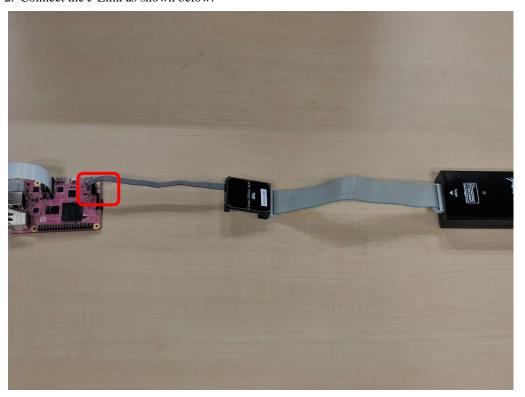
convenient thing if you have



2. Connect the mipi camera as shown below.



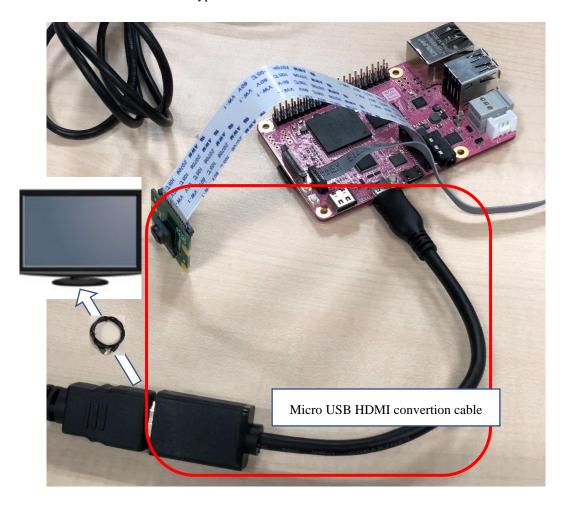
3. 2. Connect the J-Link as shown below.



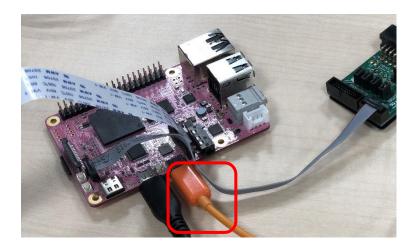
Please connect the red wire side of the cable to the "1" and "2" pins



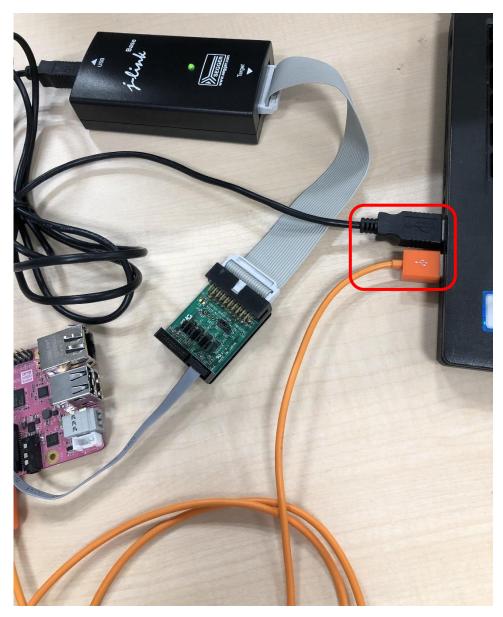
4. Connect the HDMI cable. The figure below uses a connector that converts to a microHDMI to HDMI cable. You can also use a USB Typec HDMI cable.



5 . Connect the miniUSB cable for power supply as shown below. The example is a micro USB cable.



6. Connect the J-Link and the micro USB to the PC.



4. Software to prepare

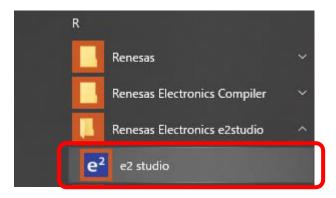
4.1 Setting procedure e2 studio

Now, set the environment of e²studio.

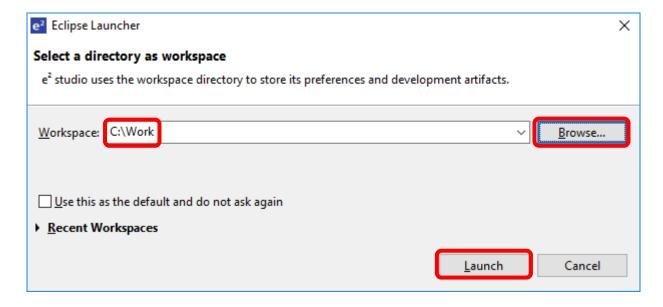
1. Unzip the GR-MANGO_food_menu_recognition.zip included in this package and store it in the work directory. (The following example shows how to create a work directory named "Work" on the C drive and store it.)



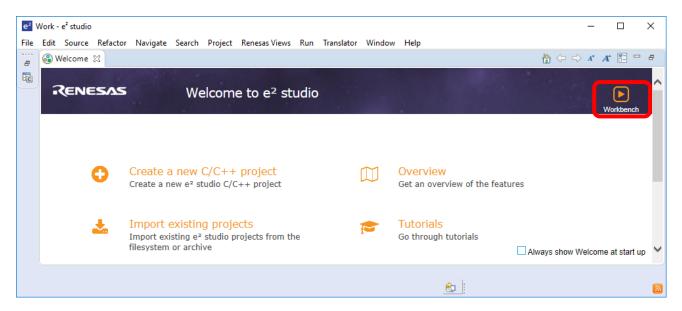
2. Start e²studio from the Windows start menu.



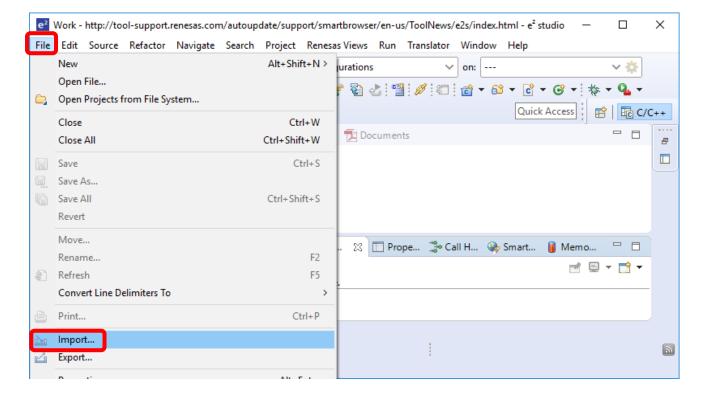
3. Click the browse button, specify "C:/Work" as the workspace, and press start. (Specified for the second and subsequent times.)



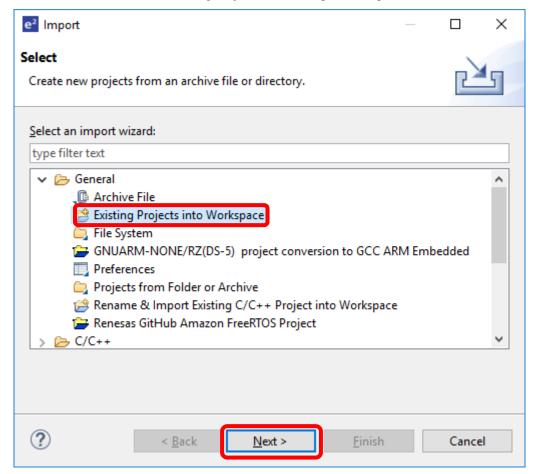
4. When the "Welcome" comes out, press the workbench button on the upper right.



5. Press the "File" button and select "Import".

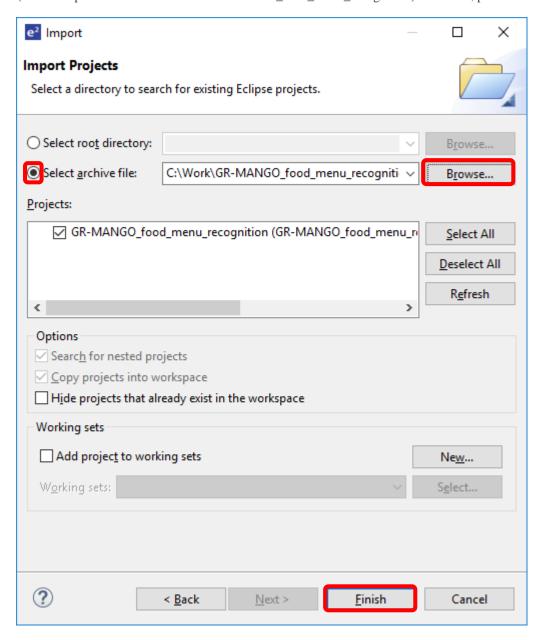


6. Press the "General", select "Existing Projects into Workspace" and press "Next".

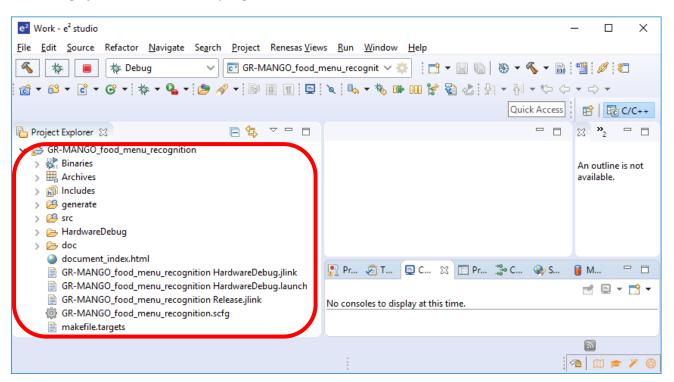


7. Press the "Select root directory". Press the Browse button, select a directory.

(The example is selected C:/Work/GR-MANGO_food_menu_recognition) After that, press "Finish button."



8. The project has been successfully imported.



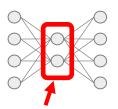
5. Demonstration overview of recognition of food menus using Al

1. Shooting food menu GR-MANGO board mipi camera

2. Al preprocessing



3. Al executing

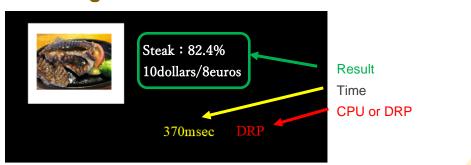


Switch between using CPU and DRP*

Color matrix correction with Simple ISP (DRP library)

NOTE: If the CNN parameters are supported by the DRP library, it can be processed 5 to 7 times faster than the CPU.

4. Recognition of food menu



Recognition food menu using AI 6.

We will recognize the food menu in the setting environment in chapter.







format

Condition

Image used when creating a learning model FOOD image dataset 15

Number of categories

ramen, stake, sushi, oyster, caesar_salad

edamame, spaghetti_carbonara, donuts, pancakes, french_fries, hamburger, club_sandwich, hot_dog,

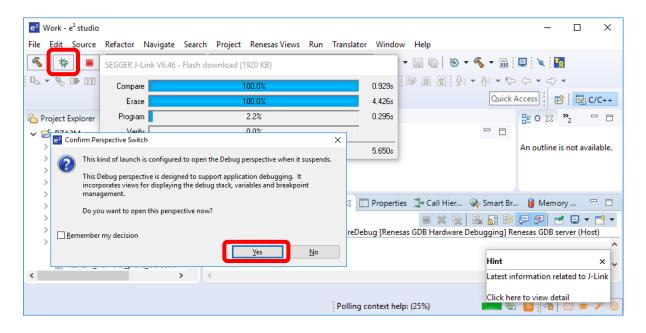
fried_rice, pizza

JPEG

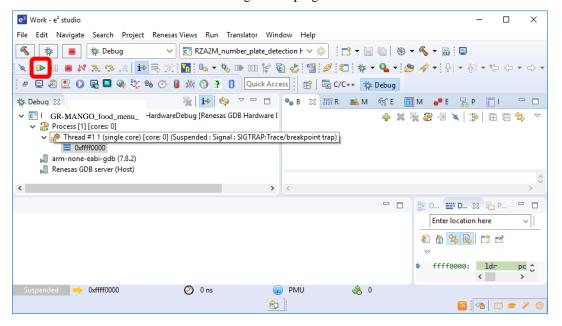
128 × 128 × 3(RGB) Input image size

(height x width x number of channels)

1. Click the icon in the red frame below, start the download. The "Confirm Perspective Switch" dialog opens. Click the "Yes" button.



2. Click the icon in the red frame below twice to go to the program.







This is the end of "AI food menu recognition on GR-MANGO"

"I want to change to my own original menu and make a food menu!" "I want to actually try AI learning!" Please proceed to "AI Customization Guide with GR-MANGO".



Note: Depending on the location, if the display becomes dark, correction may be required. Please contact Renesas.