Image Classification Game

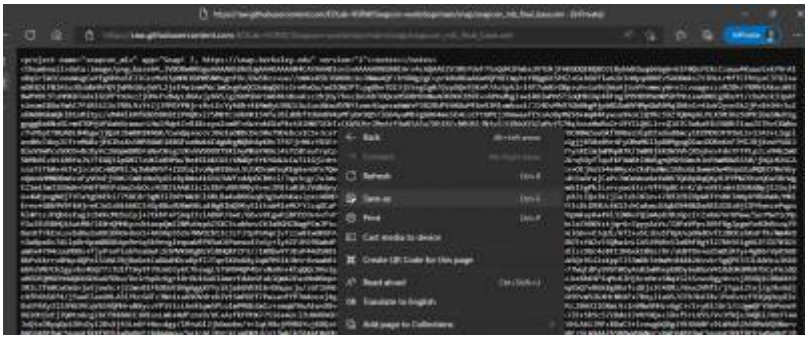
This **Snap! game** uses **Nvidia Jetson** capability to classify images.

Offline Snap! downloading

Please download and open Offline version of Snap! for our project. Go to https://snap.berkeley.edu/offline and follow the steps.

Snap! files' downloading

Please open the link Classification Game to download our project on your computer. Probably you would see the xml in raw format. Click the right button of your mouse and save it on the disk.



Web camera Image in Snap!

You can get picture from your web camera in Snap!.

- **video capture** block to enable video capturing.



- Change value of **set video transparency** block to *0* for clear image.



- **video snap on stage** block reports picture from stage.



Connection to Jetson from Snap!

If you have not imported it yet, please download jetson blocks and import it to your Snap! project.



Enable **Javascript Extensions** for

following blocks.

- Use **connect to Jetson url** block to connect Jetson.



You need **ip address** of Nvidia Jetson. You can use *ifconfig* command in a terminal to get **ip address**.

- Store the value of **jetson_name** in a variable.



- Store the value of **connect to Jetson url** block in a variable for later use.



Response from classification

Here we will send **video snap on stage** to Jetson for processing. Jetson will respond back class name, confidence value and class ID.

Only **class name** and **confidence value** will be used in this example. This project does not use ~~**class ID**~~.

- Use **get response from Jetson** block to send **image** , and get **class name** and **confidence value**.
  - First input slot is for **jetson** variable that stores websocket data.
  - Second input slot is for **costume** you want to be classified by Nvidia Jetson.



Class name and confidence value

This section will demonstrate how to handle **response** variable to access **class name** and **confidence value.**

- **class name** is the 2nd item of 1st item of **response** block.



- **confidence value** is 2nd item of 2nd item of **response** block.



Multiply **confidence** value by 100 to get percentage of **confidence** .

You can create custom blocks, to get **class name** *get class name from response* and to get **confidence** *get confidence from response* .

Speech functionality

Speech functionality is available as a library in Snap!. Select *export libraries* from settings then choose *speech module* .

- Use **join** block to create text like *I am **confidence** percent sure, it is **class name*** .



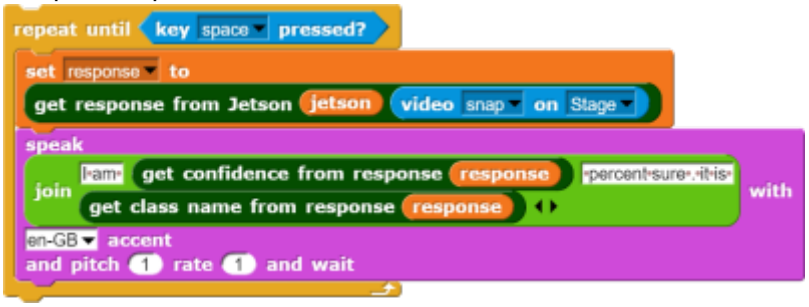
- Use **speak and wait** block to read text a loud.



Repeat block for game

Last step is adding loop for the game.

- Use repeat block and put script inside of it.





This example used **repeat until** block to break loop when *space* key pressed.
You can download full game from Github page of EOLab-HSRW.

From:
https://wiki.eolab.de/ - **HSRW EOLab Wiki**

Permanent link:
https://wiki.eolab.de/doku.php?id=snapcon2022:image-classification-game&rev=1659786534

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