EE104

Lab8

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**Documentation:**

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1. **CNN**

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First, you need to import the following libraries and packages to run the program:

Text

Description automatically generated

Download and prepare the CIFAR10 dataset:

Text

Description automatically generated with low confidence

Plot 25 images from the training set to verify that the dataset look correct:

Text, letter

Description automatically generated

Results:

A picture containing different, old, various

Description automatically generated

Create the convolutional base:

* Text

  Description automatically generated with medium confidenceThe code below defines the convolutional base using a common pattern: a stack of [Conv2D](https://www.tensorflow.org/api_docs/python/tf/keras/layers/Conv2D), [MaxPooling2D](https://www.tensorflow.org/api_docs/python/tf/keras/layers/MaxPool2D) layers, Dropout, Flatten, Dense, and BatchNormalization.

Display the Architecture of your model:

Graphical user interface

Description automatically generated with medium confidence

Compile and train the model:

Graphical user interface, text

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidenceResults:

Evaluate the model:

Text, email

Description automatically generated

Result:

Graphical user interface, chart

Description automatically generated

Graphical user interface, application

Description automatically generated

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1. **CNN-Challenge test**

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First, you need to import the following libraries and packages to run the program:

Text

Description automatically generated

Then apply part 1 and following code. Results:

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application

Description automatically generated

Text, application

Description automatically generated

Text

Description automatically generated

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1. **Game: balloon**

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First, you need to import the following libraries and packages to run the program:

Text

Description automatically generated

You also need to install the pgzrun in the command:

Ảnh có chứa văn bản

Mô tả được tạo tự động

Setting the screen size:

Graphical user interface

Description automatically generated

Set up the music:

Graphical user interface, text

Description automatically generated

Create the balloon ready:



Prepare the obstacles:

Text

Description automatically generated

Create the global variables:

Text

Description automatically generated

Manage the high scores:

Text

Description automatically generated

The score will be store in the file high-scores.txt which located in the balloon folder:

Graphical user interface, text, application

Description automatically generated

Create the draw function to draw the actors, background, and displays the score on screen:

Graphical user interface, text, application

Description automatically generated

Text

Description automatically generatedReact to the mouse click:

Make the bird flap:

Text

Description automatically generated

Create the update function:



If the mouse is not being pressed, the balloon is going down by 1 pixel:

A picture containing text, orange, dark

Description automatically generated

Text

Description automatically generatedTo move the birds:

* For bird 1, I changed the bird.x > 400, so when the bird fly passes the balloon, it will disappear.

Move the house and the tree:

Text

Description automatically generated

To check if the balloon touches the top or the bottom of the screen, the game is over.

Graphical user interface, text

Description automatically generated with medium confidence

To check if the balloon has hit any obstacles below, the game is also over.

Text

Description automatically generated

Enjoy the game:

A group of hot air balloons in the sky

Description automatically generated with medium confidence