



C4 Spain GBPE Mobility

GBPE Erasmus+ project . 2019-1-CZ01-KA229-061282-1

“Girls & Boys are Programming in Europe ”

girlsboysprogramming.eu

V2 Spain UIPEC Virtual Mobility

UIPEC Erasmus+ Project 2019-1-ES01-KA219-065673

“Using ITC to Preserve European Crafts”

eucrefts.eu

**Girls & Boys
Programming in Europe Erasmus+**

Co-funded by the
Erasmus+ Programme
of the European Union

**C4 European Congress:
“Innovative tools in ITC Learning”**

Participates

Organization by

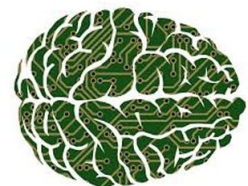
IES Playamar
Torremolinos
Spain
March 2022

girlsboysprogramming.eu

Machine Learning AI Programming Workshop

Imparted By Prof. Alfonso Ballesteros (IES Playamar)

Introduction to Machine learning Workshop



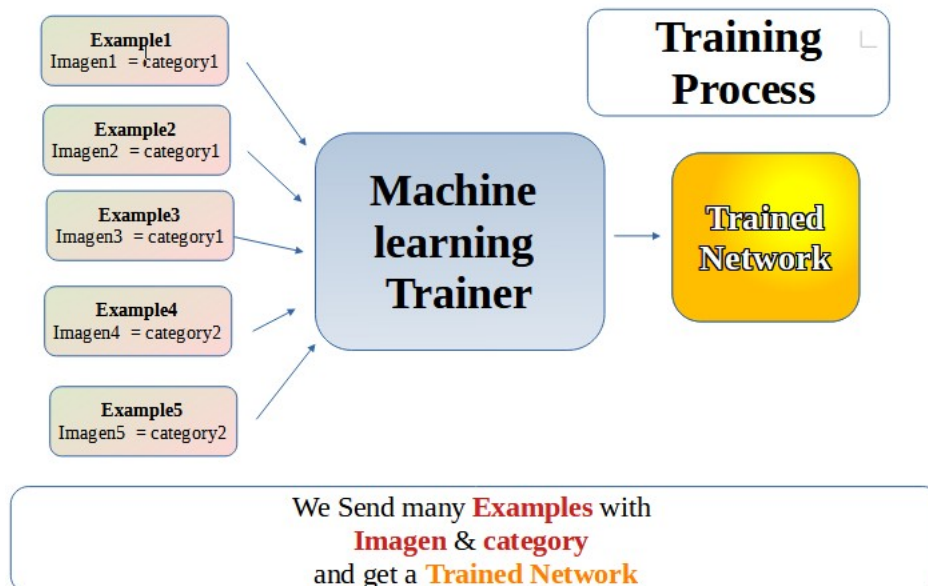
Context

This workshop is made as one of the ICT formation activities part of the C4 Spain GBPE Mobility of the GBPE “Girls & Boys are Programming in Europe” Erasmus+ project . 2019-1-CZ01-KA229-061282-1 Erasmus +”. This activity will be also considered as part of a synergy activity for a Virtual Mobility of the UIPEC Erasmus+ Project 2019-1-ES01-KA219-065673 “Using ITC to Preserve European Crafts” . This Workshop has been imparted By **Alfonso Ballesteros from IES Playamar**.

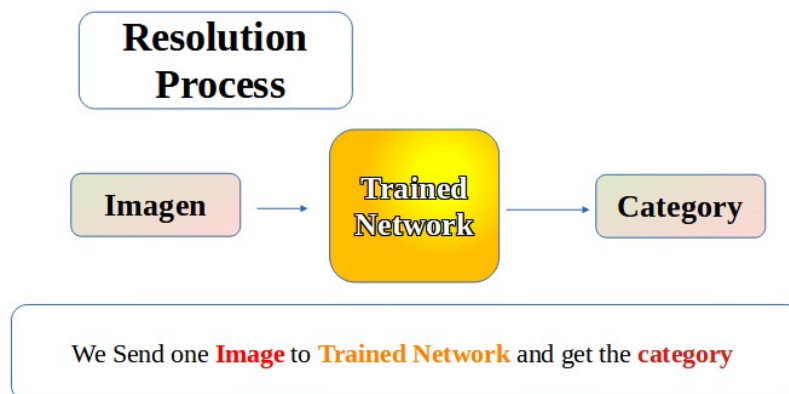
What's Machine Learning?

Machine learning is a computational technology which is used to make software learn by examples. It Has two process : Training and Resolution

1º First we train the **Neural Network** with **examples**



2º second The resolution process: we show a **image** or a **text** to the **Trained Neural Network** and it gives us a **Category**



Let's Make some examples.

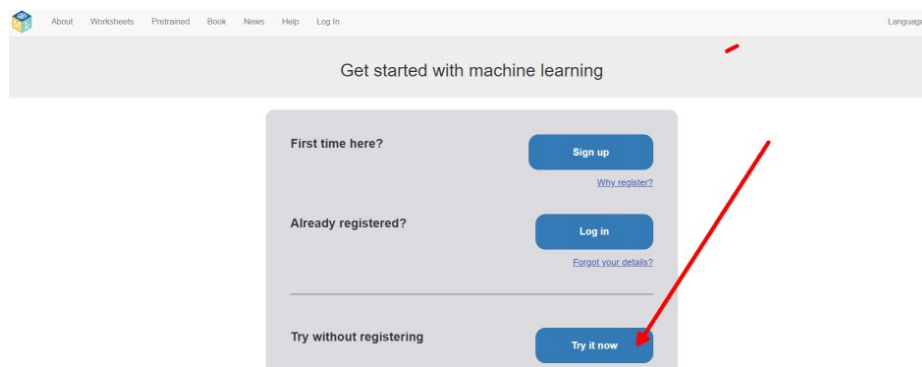
We will use an online platform called Machine Learning for Kids – IBM.org

www.ibm.org/activities/machine-learning-for-kids

We will enter in the platform :

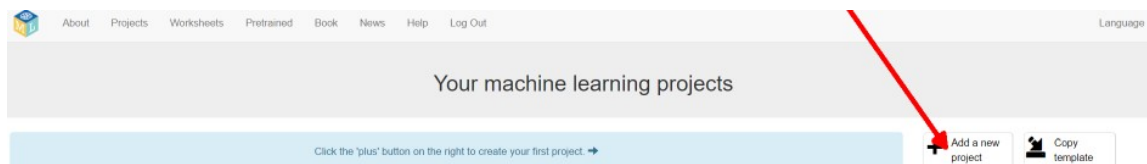
<https://machinelearningforkids.co.uk#!/login>

We will try it without registering for this workshop (but its free for teachers and students)



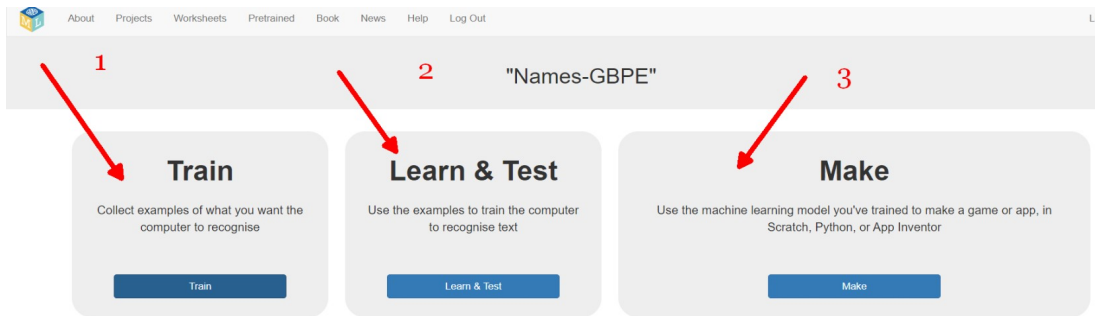
1º Example “text Machine Learning”

We will train a text machine to identify names of boys and girls

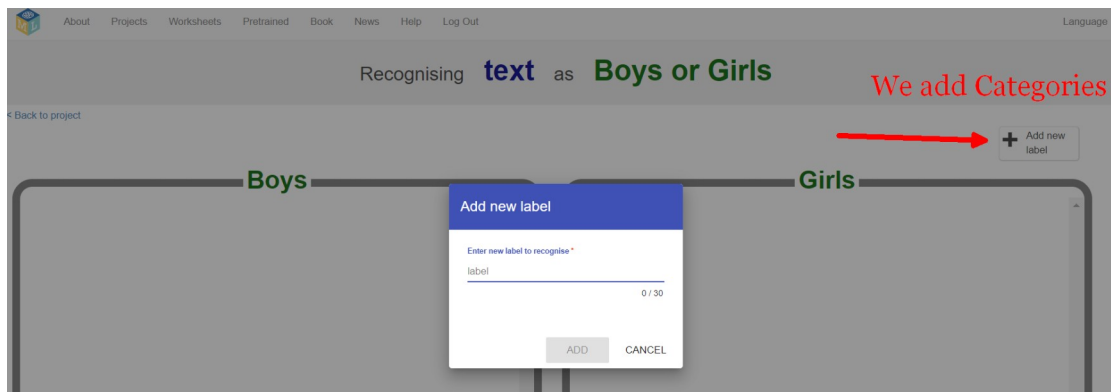


We will set a name a text model and a language “English”

First we will train it (Number 1) then we will test it (Number 2) finally we could import it (Number 3) to another platform like (App inventor) to use it on a Software

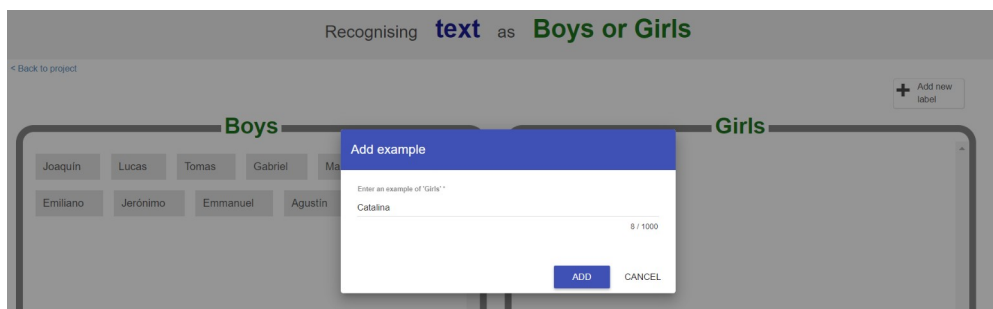


First we press on train and add the categories : Boys and Girls



Then we add Examples

Boys		Girls	
Emiliano	Joaquín	Maria José	Renata
Jerónimo	Lucas	Emma	Emilia
Emmanuel	Tomas	Catalina	Natalia
Agustín	Gabriel	Julieta	Zoe
Juan	Martín	Mía	Nicole
Pablo	David	Antonella	Paula
José	Andrés		



2º We train the network clicking in Learn and Test

What have you done?

You have collected examples of text for a computer to use to recognise when text is Boys or Girls.

You've collected:

- 11 examples of Boys,
- 11 examples of Girls

What's next?

Ready to start the computer's training?

Click the button below to start training a machine learning model using the examples you have collected so far

(Or go back to the [Train](#) page if you want to collect some more examples first.)

Train the Network

Info from training computer:

Train new machine learning model

3º When we train the network it takes several seconds and then we can try it in the Proving-Box

Try putting in some text to see how it is recognised based on your training.

test

Recognised as **Girls**
with 16% confidence

Result

Prove several names and discover how intelligent is the network.

4º Finally we can export it to app inventor or others pressing in **Make**

About Projects Worksheets Pretrained Book News Help Log Out

Make something with your machine learning model

Scratch

Make a project in the old version of Scratch

Scratch

Scratch 3

Use the new version of Scratch

Scratch 3

Python

Write Python code to use your machine learning model

Python

App Inventor

Make a mobile app for your phone or tablet

App Inventor

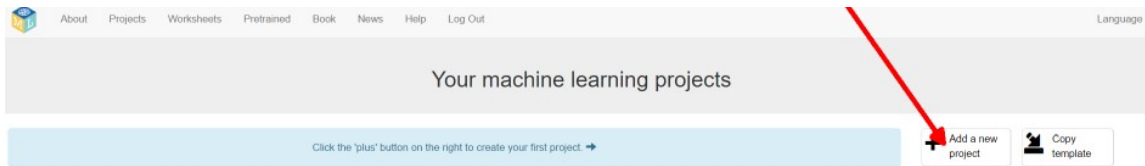
Make

Use the machine learning model you've trained to make a game or app, in Scratch, Python, or App Inventor

Make

2° Example “Image Machine Learning”

We will train a text machine to identify Colours



We will set a name a image model

Project Name *

Colors-GBPE

Recognising *

images

What type of thing do you want to teach the computer to recognise?

For words, sentences or paragraphs, choose "text"

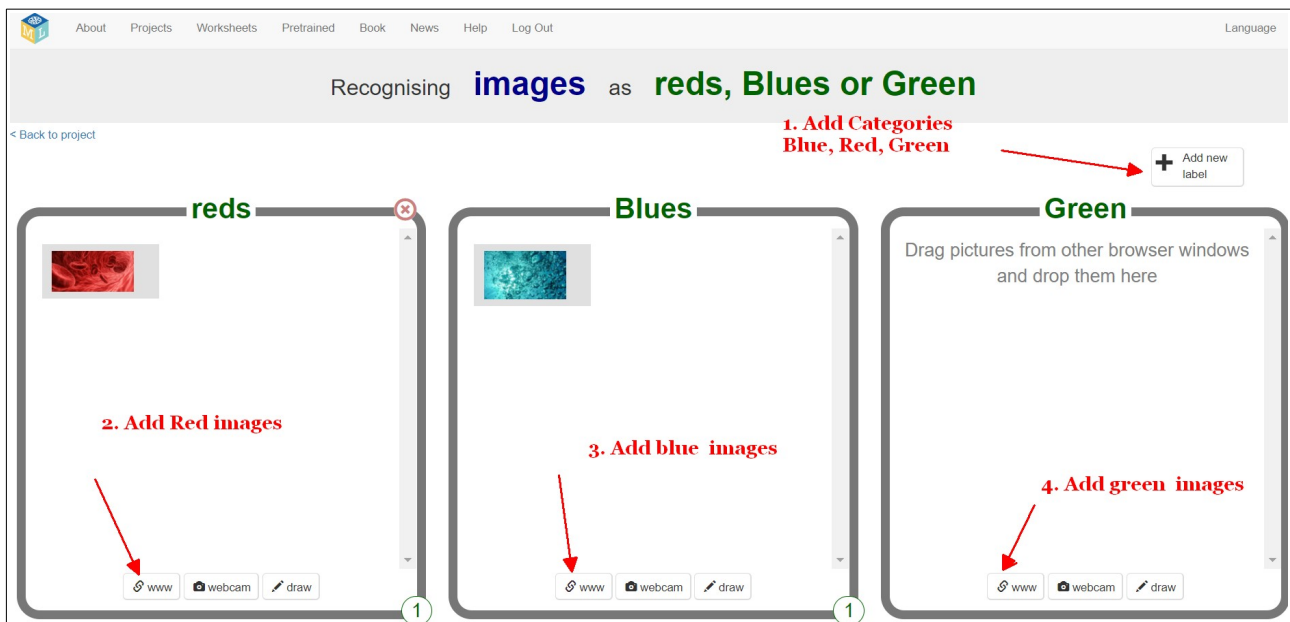
For photos, diagrams and pictures, choose "images"

For sets of numbers or multiple choices, choose "numbers"

For voices and sounds, choose "sounds"

CREATE CANCEL

We add 3 categories Blue, Green and Red and we add the following 5 images to each category (minimum is 5)



Blues

<https://i.postimg.cc/Jh8Xc3y6/blue1.jpg>

<https://i.postimg.cc/C59BZbT4/blue2.jpg>

<https://i.postimg.cc/C1Lf9Fsb/blue3.jpg>

<https://i.postimg.cc/mkP128qD/blue4.jpg>

<https://i.postimg.cc/R0mP6Hv9/blue5.jpg>

Greens

<https://i.postimg.cc/gc76BbX6/green1.jpg>
<https://i.postimg.cc/2SRLrdxk/green2.jpg>
<https://i.postimg.cc/QdQ9tB6p/green3.jpg>
<https://i.postimg.cc/4NhHD2V2/green4.jpg>
<https://i.postimg.cc/JhQpbzhX/green5.jpg>

Reds

<https://i.postimg.cc/zBtRr9x6/red1.jpg>
<https://i.postimg.cc/YS8v65B0/red2.jpg>
<https://i.postimg.cc/q7ptCkYW/red3.jpg>
<https://i.postimg.cc/tTTY2B95/red4.jpg>
<https://i.postimg.cc/V6LD4PSV/red5.jpg>

Reconociendo **imágenes** como **reds, Blues or Green**

[Volver al proyecto](#)

[+ Añadir etiqueta](#)

reds

www webcam Dibujo

5

Blues

www webcam Dibujo

5

Green

www webcam Dibujo

5

Then We go back and train and test



We will test it with the following images

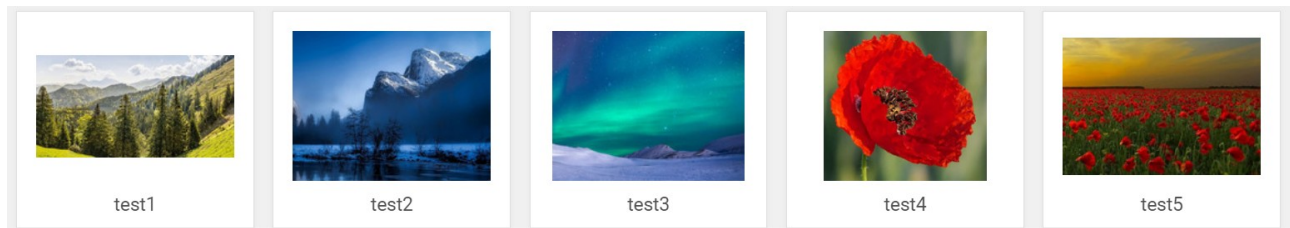
<https://i.postimg.cc/tC5dSMb0/test1.jpg>

<https://i.postimg.cc/TPyrP2DG/test2.jpg>

<https://i.postimg.cc/7ZZ3pnP5/test3.jpg>

<https://i.postimg.cc/mgpYR1h8/test4.jpg>

<https://i.postimg.cc/k5kWRrQS/test5.jpg>



Testing with Test1

Try putting in an image to see how it is recognised based on your training.

Recognised as **Green**
with 92% confidence

URL to Test (points to the input field)

Result (points to the output text)



Girls & Boys Programming in Europe Erasmus+





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Thanks!
😊



Connect with me in Etwinning for more ITC workshops “Alfonso Ballesteros”
In Twitter on the web [@DTSE_Erasmus](https://twitter.com/DTSE_Erasmus)



**Build your project on
your computer**



**Test it live on
your device**