

## IO3 – School Program for Primary Education Students

Basic Learning Activity  
Digital Content Creation



## Questions/Problems for each topic

Topic	Question/Problem*
Information and Media literacy	<i>Can AI help you in your search for information for your science paper?</i>
Communication and Collaboration	<i>Do you think Google might be able to order your favorite pizza?</i>
Content Creation	<i>Can a machine [learn to] recognize drawings, images, and sounds?</i>
Responsible Use	<i>What do you think is the dark side of AI?</i>
Problem Solving	<i>Why does the mobile phone unlock with my face?</i>

## Learning activities Template

Use this template to design and develop the two Learning Activities.

<b>Question/Problem</b>	<b>Can a machine recognize drawings, images, and sounds of your lovely pets?</b>
<b>Level (Basic/Advanced)</b>	Basic
<b>Introduction</b>	The teacher asks students, some days before the activity, to bring (digital or not) 5 different photos of their favorite pet, either they have or would like to have. The teacher starts this new activity about Artificial Intelligence posing the question “can a machine learn to recognize drawings, images and sounds?” with a discussion or a small video.

## Process

1. First, we split into groups and showed our photos to the group. Then each of us chose the pet of another member of our group and made 1 design either on cardboard or in an app on our tablet. They can be use for this activity the app [Quick Draw](#) and they can also use the app [AutoDraw](#) (see for more details the videos of the Tutorial Challenge related to this activity).
2. Then the teacher asked students to vote for their favorite pet to see the top 5 pet-winners in our class, using a simple digital poll (e.g. google form, kahoot etc.).
3. After this, students gather all the photos and drawings in a common interactive online or not board so that everyone can see all the pets (e.g. padlet, jamboard etc.)
4. Then it is time to play the game. They show or upload all the collected photos one by one using a computer AI app. The machine tries to recognize all the photos! The app "[Whatis the Animal.com](#)" be used for this activity. They can also use mobile phones that have a camera with an "AI" feature or a mobile all, e.g. Google Lens (see Appendix of the Tutor Handbook)!
5. A discussion start about which photos the machine recognize and which it does not and what conclusions we made at the end.
6. Then the students explore thousands of photos through the app "<https://cocodataset.org/#explore>" that identifies faces, animals or objects and then draws their outline! Is it easy for humans to recognize a lot of things and faces and animals in only one photo?

7. Can we do the same thing with the sounds our favorite pets make or the sounds that birds make? What can Artificial Intelligence support us for this? The students explore a huge board with thousands of bird calls, together with the app “<https://experiments.withgoogle.com/ai/bird-sounds>”.
8. Using another app “<https://merlin.allaboutbirds.org>” the students can give it a recorded sound of a bird and answer a few simple questions, it may be able to find what bird it is! you can try also: “<https://cals.cornell.edu/discover/animals>”]

### Final activity

We propose, as a reflection activity, a discussion about of the questions that may be posed, such us:

1. How does AI systems recognize the pictures and the sounds?
2. Why cannot AI systems recognize some pictures or/and sounds?
3. While showing a photo of an animal, can the AI system recognize the animal and play its sound, or when hearing of an animal voice, can the AI system recognize the animal and present us its photos?
4. What can Artificial Intelligence offer to us?
5. What is the difference between AI systems and human intelligence?
6. Finally, can a machine learn to recognize pictures and sounds?
7. What are your ideas?

## Appendix: Ideas about the answers to the above questions

The way people (with eyes and ears) recognize images and sounds is very different from machines (with camera - digital images and microphones - digital sounds). The machines are trained through a very large number of images and sounds so an object or animal may not be recognized, for example, due to:

- brightness/contrast of image or the presence of noise
- different colors or shades
- short or long distances
- different angles and positions of objects
- low resolution images and sounds
- show only part of the sound or image
- existence of many objects and sounds at the same time



Source: [www.freecodecamp.org](http://www.freecodecamp.org)

It is interesting for children themselves to identify images and sounds that the machines recognize or not, but also their classmates recognize or not. So the following table can be created:

<i>Recognition by...</i>	<b>MACHINE</b>	<b>STUDENTS</b>
Image/sound 1	Yes	Yes
Image/sound 2	Yes	No
Image/sound 3	No	Yes
Image/sound 4	No	No

## AI image recognition fooled by single pixel change