ARTIE: Artificial Intelligence in Education - challenges and opportunities of the new era: development of a new curriculum, guide for educators and online course for students
Project co-funded by European Union under Erasmus+ Programme, 2020-1-HR01-KA201-077800

TITLE: Can machine learning recognize poses?

LEARNING SCENARIO		
School:	***Duration (minutes):***	90
Teacher:	***Students age:***	10+

Essential Idea:	**Train a computer to recognize your poses.**

Topics:

- artificial intelligence, machine learning,

Aims:

- get to know and understand the concept of machine learning and neural networks
- experimenting with AI: training, testing, improving models

Outcomes:

- the ability to test models' pose recognition
- create their own projects using online AI platform
- developing algorithmic thinking: understanding, analysing and problem solving

Work forms:

- individual work, work in pairs, group work

Methods:

- presentation, talk, interactive exercise

ARTICULATION
The course of action (duration, minutes)
INTRODUCTION We trained models that recognize images and sounds. Can we make models recognize poses? **Announcement of the goal of the lesson:** Today we'll be learning how to train our own AI models to recognize poses.

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MAIN PART

Machine learning models can be trained using different data representations. Images are one form of data representation, similar to pictures. Poses, which you may have noticed during your model training are represented as blue dots and lines, are a simplified form of data representation known as points (dots) and edges (lines). These points are calculated from your camera image using another machine learning model known as posenet.

Interactive exercise:

- Teach a model to classify body positions using files or striking poses on your webcam.
- Go to: https://teachablemachine.withgoogle.com
- Present your model to the students in the class. Discuss. Save your work to the class e-portfolio.

Topics for discussion:
What do you think is different about the pose model?
Do you think that it would get confused if we used a different background?
Artificial Intelligence gives us a world of possibilities: we can train models to learn by processing numerous types of data and apply those models to help solve real human problems?
But what are some of the downsides of machine learning models?
What might go wrong?

CONCLUSION

Image models were trained on the entire images from the camera, while pose models looked only at the dots and lines that are recognized as a body pose.

Methods

presentation
talk/discussion
work on the text
graphic work
interactive exercise /simulation on the computer
interview
demonstration
role playing

Work forms

individual work
work in pairs
group work
frontal work

Material

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Literature

- https://teachablemachine.withgoogle.com
- https://kidscodejeunesse.org

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PERSONAL OBSERVATIONS, COMMENTS AND NOTES