

Machine Learning For Kids :: Teachers' notes

Worksheet	Shy Panda
Activity	Make a character in Scratch that stops dancing if it recognises you looking at it
Objective	Teach a computer to recognise pictures <ul style="list-style-type: none"> Learn how computers can be trained to recognise an object
Difficulty level	Beginner
Time estimate	45 minutes
Summary	Students will train a machine learning model to recognise pictures by taking photos of their face with a computer webcam. They will use this in Scratch to make a character that recognises what they are doing.
Topics	image classification, supervised learning

Setup

Each student will need:

Print-outs	Project worksheet (download from https://machinelearningforkids.co.uk/worksheets) Blocks in Scratch scripts are colour-coded, so printing in colour will make it easier for students.
Technology	Web-cam
Access	Username and password for machinelearningforkids.co.uk

Class account will need:

API keys	Watson Visual Recognition 1 custom model per student One "Lite" API key is free but can only be used to create 2 custom models One "Standard" API key can be used to create multiple custom models more detail at: https://github.com/IBM/taxinomis-docs/raw/master/docs/pdf/machinelearningforkids-apikeys.pdf
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Help

Potential issues	<ul style="list-style-type: none"> Students will be taking photos of their face and uploading them to a secure site, where they are kept until their photo or project is deleted. If this raises concerns it may be sensible to obtain parental permission. Machine learning models can sometimes take up to 5 minutes to train. It is okay for students to work on their Scratch projects during this time, rather than wait for this to complete first. "https://machinelearningforkids.co.uk" is a long URL to type for some children. You may find it easier to set up a bookmark that they can click on instead. The worksheet screenshots are based on Scratch 3. Some students may be unfamiliar with this, however the worksheet should provide enough guidance for even students who have never used it before. <p>General troubleshooting and help at https://machinelearningforkids.co.uk/help</p>
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