Machine Learning For Kids :: Teachers' notes

Worksheet	Locate Larry
Activity	Make a Where's Wally? game in Scratch and teach the computer to find your character.
Objective	**Teach a computer to find something in a picture** • How computers can be trained to recognise pictures. • How image pre-processing is used to find a small item in a larger picture
Difficulty level	Intermediate The project is reasonably straightforward but builds on being able to do image classification of individual images. It's better used as a follow-on project to another images project.
Time estimate	1 hour
Summary	Students will make a Scratch project that generates a scene, cuts it into a grid of smaller squares, and trains an image classifier on those grid squares.
Topics	image classification, supervised learning, image pre-processing

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.
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 to create multiple custom models more detail at: https://github.com/IBM/taxinomitis-docs/raw/master/docs/pdf/machinelearningforkids-apikeys.pdf

Help

Potential issues	• Machine Learning models for image projects sometimes take up to 5 minutes. Students can continue to work on their Scratch project scripts while they wait, if you like. They won't be able to run the project until the status light next to their project name in Scratch will go green when it's ready. • "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. General troubleshooting and help at https://machinelearningforkids.co.uk/help