Machine Learning For Kids :: Teachers' notes

Worksheet	Snap
Activity	Make a card game in Scratch that learns to recognise pictures of your card.
Objective	**Teach a computer to recognise what icons look like** • Learn how computers can be trained to recognise pictures
Difficulty level	Beginner
Time estimate	1.5 hours (for full version of the project, where the students make their own cards) or 45 minutes (if students are provided with pre-made cards)
Summary	Students will make cards with different coloured icons. They will train a machine learning model to recognise what the icons look like by taking pictures of them with a computer webcam. They will use this in Scratch to make a Snap game where the computer recognises if it chooses a matching card.
Topics	image classification, supervised learning

Setup

Each student will need:

Print-outs	Project worksheet (download from https://machinelearningforkids.co.uk/worksheets)
Files	Starter file (download from https://machinelearningforkids.co.uk/worksheets)
Resources	Paper, scissors, felt pens (for full project, where the students make their own cards) or Pre-made cards (download and print from https://machinelearningforkids.co.uk/worksheets)
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 1 custom model One "Standard" API key can be used to create to create multiple custom models more detail at: https://github.com/dalelane/ml-for-kids/raw/master/doc/machinelearningforkids-apikeys.pdf

Help

Potential issues	• Students will be taking photos and uploading them to a secure section of Machine Learning for Kids, where they will be kept until the student project is deleted. Individual photos can be deleted by students at any time. As long as only the cards are visible in the photos that they take, then no students will be identifiable from this. However, if this raises concerns then it may be sensible to obtain parental permission. General troubleshooting and help at https://machinelearningforkids.co.uk/help