Machine Learning For Kids :: Teachers' notes

Worksheet	Judge a Book
Activity	Make a game in Scratch to test whether it really is possible to judge a book by its cover.
Objective	**Teach a computer to recognise visual style** • How effectiveness of a machine learning system can be measured by comparing performance against humans.
Difficulty level	Intermediate Collecting the book cover images can be time-consuming. The term "genres" may require explanation. The idea of measuring performance by comparing answers against those of another human can require some explaining.
Time estimate	1 hour
Summary	Students will use a library or book retailer website to collect photos of book covers, and use these to train a machine learning model to recognise the genre of a book, based on a picture of the cover. They will use this to make a project in Scratch.
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.
Access	Access to a library or book retailer site (e.g. Amazon, etc.)
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	• A beginner level version of the worksheet is available that skips the bit where the machine learning model performance is compared with a person's. • Students will need Internet access to search for pictures of book covers to train the computer with. Depending on the age of the students, close supervision may be appropriate to ensure safe searching. • Dragging and dropping doesn't work in Internet Explorer. You can provide your students with a different web browser (Firefox or Chrome work well) or explain to them how to copy/paste image URLs from a page. • You cannot drag and drop pictures between different types of browser. E.g. you can't drag a picture from a Firefox window to Machine Learning for Kids running in Chrome. You need to use the same type of web browser for both. • "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