Machine Learning For Kids :: Teachers' notes

Worksheet	Titanic
Activity	Train the computer to be able to predict who survived the sinking of the Titanic.
Objective	**Teach a computer to predict outcomes** • Predictive analytics can be used to identify patterns in structured data.
Difficulty level	Beginner
Time estimate	45 minutes
Summary	Students will train a predictive model based on historical data.
Topics	predictive model

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
	Other	A way of creating and running Python programs

Class account will need:

	API keys	None

Help

Potential issues	• "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 Python program that the students will create will use the third-party library "requests". There is a link on the student page to information about how to install requests, but it will be simpler if you can ensure that it's installed before beginning the class. See https://3.python-requests.org/user/install/#install for more info. • The most significant part of the project is reviewing and understanding the training data. Allow a lot of time for this. Think about how to approach it. You could invite them to speculate about possible patterns first (e.g. Men were more likely to survive if they had a wife and children with them as families might have been kept together? Or men were more likely to survive if were alone as they could've been more selfish?) and then look to see if the data matches that. You could invite them to find patterns in the data and then theorize for reasons after. Or you could let them do a bit of both. They need to spend some time looking and thinking about patterns in the data. Make it clear that the computer will be looking for patterns in the data (but not interpreting, speculating or theorizing about those patterns). • After the session, encourage the students to think of other applications of a predictive model. What other sets of numerical and categorical (multiple-choice) data can they think of that might have patterns a computer could learn? General troubleshooting and help at https://machinelearningforkids.co.uk/help