machinelearningforkids.co.uk

Guide for unmanaged class accounts

1. ### Create a Bluemix account if you don't already have one
   You'll need a Bluemix account to set up the Watson APIs.
   If you're new to Bluemix, see section 1 in the step-by-step guide at
   https://github.com/dalelane/ml-for-kids/raw/master/doc/machinelearningforkids-apikeys.pdf

2. ### Create Watson Conversation credentials for your group to use
   You will need to do this if you want your class to be able to do projects that recognise **text**
   Create Conversation instances at https://console.bluemix.net/catalog/services/conversation
   If you're new to Bluemix, see section 2 in the step-by-step guide at
   https://github.com/dalelane/ml-for-kids/raw/master/doc/machinelearningforkids-apikeys.pdf

3. ### Add Watson Conversation credentials to the tool
   You will need to do this if you want your class to be able to do projects that recognise **text**
   Go to https://machinelearningforkids.co.uk/teacher
   The section "Watson Conversation" has an "Add new credentials" button. Click that, and enter the username and password for your Conversation service from step 2.
   The number of "workspaces" for the service instance you create will be the number of text machine learning models your group can have at any one time.
   You can add more if you need more for your group – go back to step 2 and repeat.

4. ### Create Watson Visual Recognition credentials for your group to use
   You will need to do this if you want your class to be able to do projects that recognise **images**
   Create Visual Recognition keys at https://console.bluemix.net/catalog/services/visual-recognition
   If you're new to Bluemix, see section 3 in the step-by-step guide at
   https://github.com/dalelane/ml-for-kids/raw/master/doc/machinelearningforkids-apikeys.pdf

5. ### Add Watson Visual Recognition credentials to the tool
   You will need to do this if you want your class to be able to do projects that recognise **images**
   Go to https://machinelearningforkids.co.uk/teacher
   The section "Watson Visual Recognition" has an "Add new API key" button. Click that, and enter the API key for your Visual Recognition service from step 4.
   The number of "custom classifiers" for the service instance you create will be the number of image machine learning models your group can have at any one time.
   You can add more than one API key if you need more for your group – go back to step 4 and repeat.

6. ### Set up accounts for your students
   You will need to create user accounts for your students to be able to log in.
   Go to https://machinelearningforkids.co.uk/teacher
   The section "Students in your group" has a button to let you create user accounts. *Their password will be displayed after the account is created.*
   (Note: You don't need to use a student's real name. Generic user names like "student01" are fine.)
   There are also controls there to delete user accounts, & reset passwords if your students forget.

7. Prepare a lesson plan
Worksheets for a variety of projects are available for download.
Go to https://machinelearningforkids.co.uk/worksheets
A suggested order to try some of these worksheets is included on the following page.
Each worksheet has step-by-step instructions, and is a complete project to demonstrate an aspect of machine learning.
Some of the projects include a template Scratch project file – these are available for download alongside the worksheet PDFs.

8. Try the worksheets out for yourself
Your admin log on will also let you create projects yourself.
Go to https://machinelearningforkids.co.uk/projects
Follow the instructions from one of the worksheets

9. Check your group settings
Your group will have a number of limits set.
Go to https://machinelearningforkids.co.uk/teacher
The section "Restrictions" will list the main limits for your group.
There will be a limit on the number of machine learning models your group can create at any one time. Models will automatically expire to help stop you exceeding this. The expiry time will be shown in the restrictions list.

10. If you run into any problems…
If something goes wrong, check the list of known problems.
Go to https://machinelearningforkids.co.uk/help
The section "Known problems" will list the problems I currently know about, and what you can do to avoid them.
If you've found a problem I don't know about, it might be worth refreshing your page. It's cliched, but that can work.
If you're still stuck, please let me know. Contact details are on the Help page.

	Introduces…	By getting kids to make a…	Teaching a machine to recognise…	What they will learn
Lesson 1: "Smart Classroom"	Confidence thresholds	Virtual Assistant	text	• How computers can be trained to recognise the intent behind writing. • The way confidence thresholds are used to handle when the machine cannot recognise the meaning. • How virtual assistants (e.g. Apple Siri, Amazon Alexa, Google Home) work.
Lesson 2: "Make me happy"	Sentiment analysis	Scratch character	text	• How computers can be trained to recognise emotional tone. • How supervised learning makes it easier to build systems that have to deal with unexpected input.
Lesson 3: "Mailman Max"	Handwriting recognition	Sorting Office game	images	• How computers can be trained to recognise handwriting • How OCR is used to automate tasks like recognising postcodes on letters
Lesson 4: "Sorting Hat"	Text classification	Harry Potter game	text	• How computers can recognise different types of language.
Lesson 5: "Noughts & Crosses"	AI in games	Noughts & crosses	numbers	• How machines have been taught to play games since the 1960's. • Decision tree learning as a way for computers to learn how to play games.
Lesson 6: "Rock, Paper, Scissors"	Image recognition	Webcam game	images	• How computers can be trained to recognise pictures. • The important of variety in training machine learning systems.
Lesson 7: "Headlines"	ML testing	Test system	text	• How computers can be taught to recognise the source of writing • How machine learning systems are tested.
Lesson 8: "Judge a book"	Image recognition	Scratch game	images	• How effectiveness of a machine learning system can be measured by comparing performance against humans.
Lesson 9: "Top Trumps"	Categorical data	Scratch card game	numbers	• How collecting training is used to make it easier to train computers than manually labelling training data. • How computers can learn to play games where the correct answer cannot be known, by predicting the likelihood of each outcome.
Lesson 10: "Tourist Info"	Training bias	Holiday app	text	• The impact of training bias on machine learning systems • Ethical questions introduced by training bias in machine learning systems.

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