machinelearningforkids.co.uk

Guide for managed class accounts

1. 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.

2. 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.

3. Try the worksheets out for yourself

   Your teacher's log on will also let you create projects yourself.
   Go to https://machinelearningforkids.co.uk/projects
   Follow the instructions from one of the worksheets

4. 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.

5. 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 making 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. • Confidence thresholds indicate 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 builds systems that can deal with unexpected input.
Lesson 3: "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 4: "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 5: "Pac-Man"	AI in games	Pac-Man	numbers	• How machines are taught to play games • Decision tree learning as a way for computers to learn how to play games.
Lesson 6: "Sorting Hat"	Text classification	Harry Potter game	text	• How computers can recognise different types of language.

	Introduces…	By making a…	Teaching a machine to recognise…	What they will learn
Lesson 7: "Judge a book"	Image recognition	Scratch game	images	• How effectiveness of a machine learning system can be measured by comparing performance against humans.
Lesson 8: "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 9: "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.
Lesson 10: "Top Trumps"	Categorical data	Scratch card game	numbers	• Collecting training is easier than manually labelling training data. • Computers can learn to play games where the correct answer cannot be known, by predicting the likelihood of each outcome.
Lesson 11: "Confused"	Overfitting	Photo recogniser	images	• Variation in training data is essential for a reliable machine learning system. • The "Russian Tank" problem.
Lesson 12: "Headlines"	ML testing	Test system	text	• How computers can be taught to recognise the source of writing • How machine learning systems are tested.