Feedback — I. Introduction

Help

You submitted this quiz on **Wed 30 Oct 2013 11:35 AM PDT (UTC -0700)**. You got a score of **5.00** out of **5.00**.

Question 1

A computer program is said to learn from experience E with respect to some task T and some performance measure P if its performance on T, as measured by P, improves with experience E. Suppose we feed a learning algorithm a lot of historical weather data, and have it learn to predict weather. What would be a reasonable choice for P?

Your Answer		Score	Explanation
The process of the algorithm examining a large amount of historical weather data.			
The weather prediction task.			
None of these.			
The probability of it correctly predicting a future date's weather.	✔	1.00	This would be a reasonable measure P of measuring our weather predictions' accuracy.
Total		1.00 / 1.00	

Question 2

Suppose you are working on weather prediction, and your weather station makes one of three predictions for each day's weather: Sunny, Cloudy or Rainy. You'd like to use a learning algorithm to predict tomorrow's weather. Would you treat this as a classification or a regression problem?

Your Answer		Score	Explanation
Classification	✔	1.00	Classification is appropriate when we are trying to predict one of a small number of discrete-valued outputs, such as whether it is Sunny (which we might designate as class 0), Cloudy (say class 1) or Rainy (class 2).
Regression			
Total		1.00 / 1.00	

Question 3

Suppose you are working on stock market prediction, Typically tens of millions of shares of Microsoft stock are traded (i.e., bought/sold) each day. You would like to predict the number of Microsoft shares that will be traded tomorrow. Would you treat this as a classification or a regression problem?

Your Answer		Score	Explanation
Classification			
Regression	✔	1.00	Regression is appropriate when we are trying to predict a continuous-valued output. Even though the number of shares traded is technically discrete-valued (i.e., an integer), it would be more natural to treat it as a continuous value (similar to the housing prices example in the lecture).
Total		1.00 / 1.00	

Question 4

Some of the problems below are best addressed using a supervised learning algorithm, and the others with an unsupervised learning algorithm. Which of the following would you apply supervised learning to? (Select all that apply.) In each case, assume some appropriate dataset is available for your algorithm to learn from.

Your Answer		Score	Explanation
☑ In farming, given data on crop yields over the last 50 years, learn to predict next year's crop yields.	✔	0.25	This can be addresses as a supervised learning problem, where we learn from historical data (labeled with historical crop yields) to predict future crop yields.
☑ Examine a web page, and classify whether the content on the web page should be considered "child friendly" (e.g., non-pornographic, etc.) or "adult."	✔	0.25	This can be addressed as a supervised learning, classification, problem, where we can learn from a dataset of web pages that have been labeled as "child friendly" or "adult."
☐ Take a collection of 1000 essays written on the US Economy, and find a way to automatically group these essays into a small number of groups of essays that are somehow "similar" or "related".	✔	0.25	This is an unsupervised learning/clustering problem (similar to the Google News example in the lectures).
☐ Examine a large collection of emails that are known to be spam email, to discover if there are sub-types of spam mail.	✔	0.25	This can addressed using a clustering (unsupervised learning) algorithm, to cluster spam mail into sub-types.
Total		1.00 / 1.00	

Question 5

Which of these is a reasonable definition of machine learning?

Your Answer		Score	Explanation
○ Machine learning means from labeled data.			
○ Machine learning is the science of programming computers.			
○ Machine learning is the field of allowing robots to act intelligently.			
◉ Machine learning is the field of study that gives computers the ability to learn without being explicitly programmed.	✔	1.00	This was the definition given by Arthur Samuel (who had written the famous checkers playing, learning program).
Total		1.00 / 1.00	