Close

Introduction

5 questions

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?



The probability of it correctly predicting a future date's weather.



The process of the algorithm examining a large amount of historical weather data.



The weather prediction task.



None of these.

2.

The amount of rain that falls in a day is usually measured in

either millimeters (mm) or inches. Suppose you use a learning

algorithm to predict how much rain will fall tomorrow.

Would you treat this as a classification or a regression problem?



Classification



Regression

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?



Regression



Classification

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.



Given data on how 1000 medical patients respond to an experimental drug (such as effectiveness of the treatment, side effects, etc.), discover whether there are different categories or "types" of patients in terms of how they respond to the drug, and if so what these categories are.



Have a computer examine an audio clip of a piece of music, and classify whether or not there are vocals (i.e., a human voice singing) in that audio clip, or if it is a clip of only musical instruments (and no vocals).



Given genetic (DNA) data from a person, predict the odds of him/her developing diabetes over the next 10 years.



Given a large dataset of medical records from patients suffering from heart disease, try to learn whether there might be different clusters of such patients for which we might tailor separate treatments.

5.

Which of these is a reasonable definition of machine learning?



Machine learning is the field of allowing robots to act intelligently.



Machine learning is the science of programming computers.



Machine learning is the field of study that gives computers the ability to learn without being explicitly programmed.



Machine learning learns from labeled data.

3 questions unanswered

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