Module 17 Career Connection

Introduction

Welcome back to another Career Connection! This week you explored machine learning and how algorithms are used in data analytics. You also created training and testing groups from a given dataset and implemented logistic regression. And that's not to mention decision trees, random forests, and support vector machine (SVM) algorithms.

It was a packed week! This material can be tricky, but it's essential to your future career as a data engineer.

NOTE

Data professionals who work in a machine learning environment are often called machine learning engineers.

There's a lot of buzz around machine learning. After all, it's the core technology behind devices we use every day: smart phones, computers, and smart-home technologies like Alexa, Bixby, and Google Assistant.

If you're interested in a career as a machine learning engineer, there are things you can start doing today to help you get there. Having a solid understanding of this module's material is a good start, but you can also strategically prepare for a technical interview in this field.

Technical Interview Preparation

As we'll be digging deeper into machine learning over the next couple of weeks, we'll begin our technical interview preparation with a few broad, conceptually focused questions.

Answer each of the following questions in two or three sentences. You can use the internet to help guide your answers. Once you've responded to each question, check your answer against the possible answer provided.

Q: What is machine learning?

A: Machine learning is the application of statistics and algorithms to data analysis in order to learn and improve without being explicitly programmed.

Q: What is the difference between supervised and unsupervised machine learning?

A: Supervised machine learning requires labeling of data, while unsupervised learning does not. For example, classification would require that we label the data that we want to use to train the model to classify data.

Q: What is the difference between precision and positive predictive value?

A: There is no difference. The terms "precision" and "positive predictive value" are interchangeable.

Hypothetical Case Study

This week, there is no narrative for the hypothetical case study. Instead, we want you to consider something that could have practical application in your life.

Consider a real-life situation in which the skills you learned this week would apply. Pseudocode a solution for tackling it. You can use the template below or write your own. Complete this assignment in any text editor, or write it in a markdown file that can be uploaded to GitHub.

NOTE

Pseudocode means to write out in plain language (English or other) the steps you would take in order to solve a specific problem. You do not need to include actual code here; the goal is just to create a kind of roadmap for solving the problem.

Template

Title

Add a short, succinct title that identifies the topic of the narrative.

Problem

Write two or three sentences outlining the problem and why it's important.

Solution

Write two or three sentences outlining the solution. Then write 8--10 steps that you could take in order to solve the problem.

Consider the following example:

Title: Using unsupervised learning to plan an efficient vacation in London.

Problem: We recently announced that we're visiting a new city, and in came the flood of suggestions: you should visit x, y, or z; don't forget to eat at this place; the best shops are found in this area; and so on. As we'll only be in London for three days, we want to make the most of our time by visiting places that are near each other. This will cut down on travel time around the city.

Solution: It seems like this would be a clustering issue that we can solve with unsupervised machine learning. Here are the first few steps we would need to take:

1. Gather the geographical data of each of the places we want to visit.
2. Pin these to a 2D map. Potentially, Google Map pins could work here.
3. Extract the geographical coordinates for each of the places.
4. Plot the coordinates on a scatter plot for illustration purposes.

Continue to Hone Your Skills

If you're interested in learning more about the technical interviewing process and practicing algorithms in a mock interview setting, check out our **upcoming workshops.** **(https://careernetwork.2u.com/?utm_medium=Academics&utm_source=boot_camp)**