Congratulations! You passed!
TO PASS 70% or higher

Keep Learning

GRADE
100%

Week 3

TOTAL POINTS 6

1. You want to create a machine learning model to classify product reviews into positive, neutral, and negative sentiments using AutoML. Which aspects of the machine learning workflow does AutoML automate? (Select all that apply) — 1 / 1 point

- [x] Model Selection

  Correct
  Correct! Typically, AutoML explores a number of different algorithms and automatically selects the algorithm that best suits the machine learning problem.

- [x] Feature Engineering

  Correct
  Correct! AutoML performs feature engineering tasks like feature selection, feature extraction, detecting and handling of missing values etc.

- [x] Hyperparameter Optimization

  Correct
  AutoML selects a number of hyperparameter configurations to explore to determine the combination of hyperparameters that improves model performance.

- [ ] Data Acquisition

2. You are excited about AutoML capabilities and want to convince your team to use it for most of their machine learning projects. Most members of your team are new to data science. — 1 / 1 point

   From the following options, what are the benefits of AutoML to bring to your team's attention? (Select all that apply)

- [x] It uses best practices in data science.

  Correct
  Correct! AutoML implements the best practices in data science.

- [ ] AutoML provides access to all the datasets that you would require.

- [x] Extensive programming knowledge is not required to implement solutions.

  Correct
  Correct! AutoML allows people with no machine learning expertise solve machine learning problems.

- [x] It saves time and resources.

  Correct
  Correct! Building and tuning a machine learning model requires numerous iterations and experiments, which can be very time and resource consuming. AutoML speeds up this process and allows for quick iterations.

3. Amazon SageMaker Autopilot, the Amazon SageMaker implementation of AutoML, documents results in a Candidate Generation Notebook, Data Exploration Notebook, and a set of scripts as .py Python files. Which information does the Candidate Generation Notebook specifically contain? (Select all that apply) — 1 / 1 point

- [ ] A description of what Autopilot learned about your data.

- [ ] Feature engineering code used to transform your data into the format that the selected algorithm expects.

- [x] A list of suggested data preprocessing algorithms and hyperparameter ranges for your model training and tuning.

  Correct
  That's right! The Candidate Generation Notebook provides links to the data preprocessor Python scripts, the algorithms, and the algorithm hyperparameters selected by Autopilot.

- [x] A Python notebook code within the .ipynb notebook file that Autopilot used to train and tune the candidate models.

✓ **Correct**

Correct! One advantage of Autopilot is that it provides complete transparency by providing access to the Python code used to train and tune the candidate models.

4. True or false: Amazon SageMaker Autopilot, the Amazon SageMaker implementation of AutoML, requires no human intervention for the tuning and model-selection process when finding the best candidate model. **1 / 1 point**

- ○ False
- ◉ True

✓ **Correct**

Correct! While Amazon SageMaker Autopilot can be used in different ways and allows varying degrees of customization, the actual tuning and model-selection process is completely automated and requires no human intervention.

5. A data scientist is asked to train a text classification model using AutoML. As part of the data preprocessing process, the AutoML process identifies and ignores "stop words". What are stop words? **1 / 1 point**

- ○ Words that are too long
- ○ Words that appear at the end of the sentence
- ○ Words that rarely appear
- ◉ Words that appear too frequently

✓ **Correct**

Correct! Stop words are low-value words that appear frequently such as "is", "the", "for", etc. Please refer to lectures on Week 3: AutoML with Amazon SageMaker Autopilot for a refresh.

6. After training a sentiment analysis model with Amazon SageMaker Autopilot, the user decides to deploy their model. In order to improve the customer experience and support, they would like to immediately detect reviews with negative sentiment when the review is posted. What is the best model-hosting option to satisfy the requirement to detect the negative review immediately? **1 / 1 point**

- ○ Customer hosting
- ○ Batch inference hosting
- ◉ Real-time hosting
- ○ Any of the above

✓ **Correct**

Correct! Real time hosting is the best option for the user because the model has to respond to real-time requests.