Machine Learning Lab Assignment

#### (You may answer the questions with code snippets or screenshots if applicable.)

# Part 1: Train and Deploy an AutoML Model in Azure Machine Learning Studio as an API.

In this part of the lab, you’re going to train a basic machine learning model on a dataset of your choice using the Azure Automated ML service and then deploy the best model as an API endpoint.

Note: You can do any/all of the steps in the Azure ML Studio GUI or the Python v2 SDK.

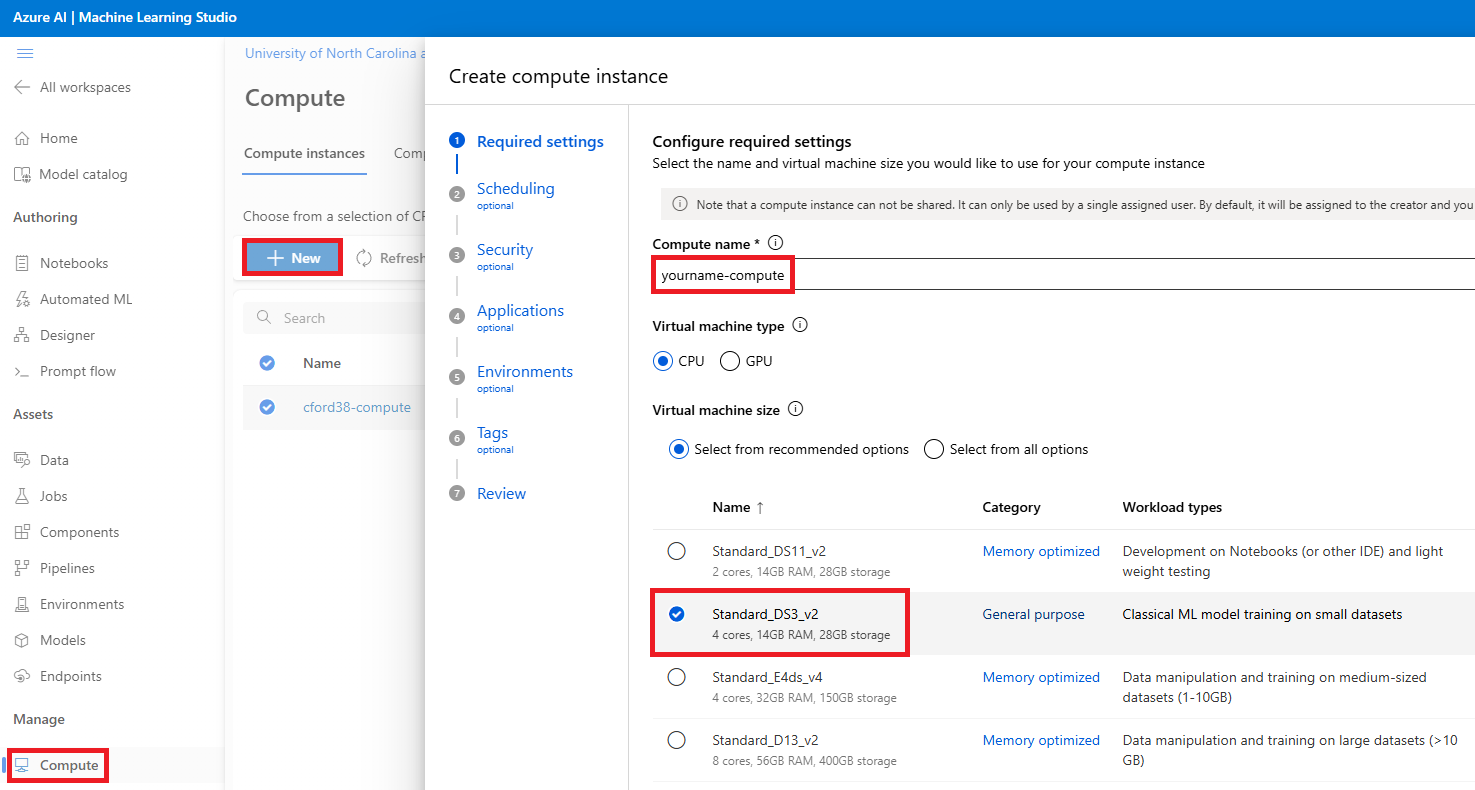
If you’re going to use the AutoML GUI, you can create a new ML job under Automated ML > +New Automated Job.

A screenshot of a computer

Description automatically generated

If you’re going to use the Python SDK (recommended), the first step is to create a Compute Instance in the Azure Machine Learning Studio. This is found under Compute > Compute instances > +New.

* Give your compute instance a name like: <YOUR NAME>-compute
* Select the Standard DS3\_v2 virtual machine size. (If you need a larger machine, ask.)



Next, if your ML dataset is in your group’s datalake, you’ll need to create a Datastore (connecting your data lake to the Azure ML Studio). (Only 1 person from each group needs to do this, but only if your data isn’t in the class data lake.)

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Once your compute instance is up and running, you can then use your desired IDE (Jupyter, VS Code, etc.) to create a Python notebook and complete the AutoML model training and deployment.

### Questions:

1. How did your AutoML process do? Did it make a decent model? Evaluate the best performing model(s) and describe their performance here. (Screenshots are great, too.)
2. Call your API endpoint using Python and score a couple rows of sample data. Provide a copy of the response from the API.

Note: Once you’ve deployed and tested your API endpoint, please delete it.

# Part 2: Play with an Azure OpenAI model and compare it to an open-source model.

This part is easy. To start, simply play with the deployed Azure OpenAI model in the Azure AI Studio.

Next, find and open-source model and ask it the same sorts of queries.

## Questions

1. Describe what you’re trying to have the LLMs do. (Screenshots of your inputs are great.)
2. Besides the Azure OpenAI model, what open-source model(s) did you use? Prove a URL link to it.
3. What are the model size differences in these models? What else is different in the model architectures/design/purpose?
4. Compare and contrast their performance on the task that you’re giving them. (Screenshots are great.)