AI/ML Workshop Labs

Lab 1: Customer Churn

1. Log into https://aws.qwiklabs.com.
2. Log into the *awsstudent* burner account using the credentials.
3. Go to SageMaker, click on *Notebook instances*, click on *Open Jupyter*
4. Download the solution notebook from here.
5. Upload this notebook into Jupyter.
6. Open the notebook and then complete all the steps with the class.

Using SageMaker Default S3 Bucket

For all of the following labs you will want to use the SageMaker default bucket in the notebooks. Here is the change you want to make in your notebooks.

Comment line that sets `bucket =` by inserting `#` before `bucket =` and insert this below it:

```
# Use SageMaker default bucket.
import sagemaker
sess = sagemaker.Session()
bucket = sess.default_bucket()
```

Lab 2: Image Classification using Transfer Learning

1. Click *Amazon SageMaker* > *Notebook instances* > *Open Jupyter*
2. In Jupyter click *SageMaker Examples*
3. Under *Introduction to Amazon Algorithms* find `Image-classification-transfer-learning.ipynb`
4. Click *Use* > *Create copy* to copy notebook into your session
5. Run each cell in notebook

Lab 3: Image Recognition using XGBoost

1. Click *Amazon SageMaker* > *Notebook instances* > *Open Jupyter*
2. In Jupyter click *SageMaker Examples*
3. Under *Introduction to Amazon Algorithms* find `xgboost_mnist.ipynb`
4. Click *Use* > *Create copy* to copy notebook into your session
5. Run each cell in notebook

Lab 4: Anomaly Detection

1. Click *Amazon SageMaker* > *Notebook instances* > *Open Jupyter*
2. In Jupyter click *SageMaker Examples*
3. Under *Introduction to Amazon Algorithms* find `random_cut_forest.ipynb`
4. Click *Use* > *Create copy* to copy notebook into your session
5. Insert this in a cell at the beginning of the notebook

   `!pip install sagemaker==1.42.1`
6. Click *Kernel* > *Restart & Run All*

Lab 5: Clustering Documents into Topics using Neural Topic Model

1. Click *Amazon SageMaker* > *Notebook instances* > *Open Jupyter*
2. In Jupyter click *SageMaker Examples*
3. Under *Introduction to Amazon Algorithms* find `ntm_synthetic.ipynb`
4. Click *Use* > *Create copy* to copy notebook into your session
5. Run each cell in notebook

Lab 6: Classifying Documents Using BlazingText and Word2Vec

1. Click *Amazon SageMaker* > *Notebook instances* > *Open Jupyter*
2. In Jupyter click *SageMaker Examples*
3. Under *Introduction to Amazon Algorithms* find `blazingtext_text_classification_dbpedia.ipynb`
4. Click *Use* > *Create copy* to copy notebook into your session
5. Run each cell in notebook

Lab 7: Forecasting US Gasoline Supply

1. In the SageMaker Examples under *Introduction to Applying Machine Learning* look for the notebook called `linear_time_series_forecast.ipynb`.
2. Click on *Use*, fix the bucket location, and then play through the notebook.
3. Next deploy this notebook on your laptop and make it work.

Lab 8: Deploy Notebook on Laptop

1. Deploy the notebook for forecasting the US gasoline supply to your laptop.
2. Create a role, get the role ARN, then use this role in the notebook.

Lab 9:

1. In the SageMaker Examples under *Introduction to Applying Machine Learning* look for the notebook called `deepar_synthetic.ipynb`.
2. Click on *Use*, fix the bucket location, and then play through the notebook.
3. Next deploy this notebook on your laptop and make it work.