**Week – 7**

**Day -2**

**Train Models with Scripts in Azure ML**

**Run a training script as a command job in Azure ML**

**Convert a Notebook to a Script**

* Notebooks are ideal for exploration and development.
* Scripts are ideal for testing and automation in your production environment.
* To create a production-ready script, you’ll need to
  + Remove non-essential code.
  + Refactor your code into functions.
  + Test your scripts (in the terminal)

**Configure a Command Job**

To configure a command job, these parameters need to be defined:

* code
* command
* environment
* compute
* display\_name
* experiment\_name

**Use Parameters in a Command Job**

* + Define parameters in the script: To use parameters in a script, you must use a library such as argparse to read arguments passed to the script and assign them to variables.
  + Set the parameter values in the command job

**Perform Hyperparameter Tuning with Azure ML**

**Understand Hyperparameter Tuning**

* In ML, models are trained to predict unknown labels for new data based on correlations betweeen known labels and features found in the training data.
* Hyperparameter tuning is accomplished by training the multiple models, using the same algorithm and training data but different hyperparameter values.

**Define a search space**

* Discrete hyperparameters:
* Continuous hyperparameter:

**Configure Sampling Method**

* + Grid Sampling
  + Random Sampling
  + Bayesian Sampling

**Configure Early Termination**

**Bandit Policy**

You can use a bandit policy to stop a trial if the target performance metric underperforms the best trial so far by a specified margin.

**Median Stopping Policy**

When the target performance metric is worse than the median running averages for all trials.

**Use a Sweep Job for Hyperparameter tuning**

* Create  a training script for hyperparameter tuning
* Configure and run a sweep job
* Monitor and review sweep jobs