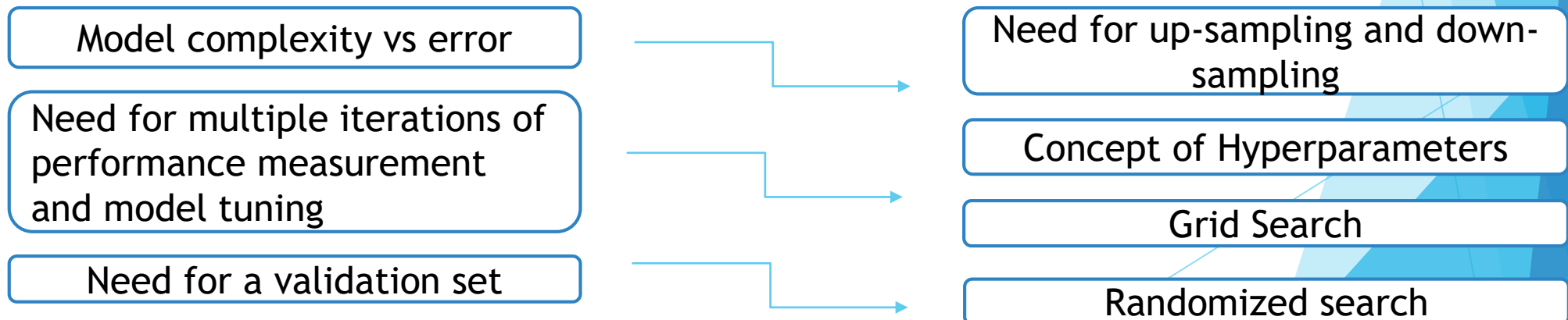


## Week 2: Model Performance Measures & Hyperparameter tuning

(Total video duration is nearly 1 hours 23 mins. You will be required to spend 60 - 80 minutes/day along with practicing datasets and quizzes)

“Model selection in Machine learning can be considered for both algorithm selection & defining the hyperparameters that work as an input for the model. A key challenge in the system is to select an appropriate model/hyperparameters especially when no prior information is available. It is also important that the model being deployed yields the optimal results without overfitting or underfitting. This can be only achieved by modifying the necessary hyperparameters. This process of amending the hyperparameters is model tuning”.

### Learning Outcomes from Week-2:



**Mentor Session Duration:**  
2 hours

**Faculty Name:**  
Prof. Mukesh Rao

**No. of videos:**  
10

S.no	Video Name	Duration of the video(min)	Conceptual or Hands On
1.1	Pipeline concept	7.11	Conceptual
1.2	Hands on exercise on pipelines	3.06	Conceptual + Hands on
1.3	Build a pipeline and make_pipeline	6.02	Conceptual + Hands on
1.4	Hands on exercise on make_pipeline	4.19	Conceptual
1.5	Model Tuning and Performance	15.55	Conceptual

**Mentor Session Duration:**  
2 hours

**Faculty Name:**  
Prof. Mukesh Rao

**No. of videos:**  
10

S.no	Video Name	Duration of the video(min)	Conceptual or Hands On
1.6	Hyper parameters and Tuning	13.19	Conceptual + Hands on
1.7	Grid Search	2.17	Conceptual + Hands on
1.8	Hands on exercise on Hyper parameters using Grid Search	9.49	Conceptual
1.9	Randomized Search CV	6.26	Conceptual+Hands on
1.10	Hands on exercise on Randomized Search CV and Grid Search CV	14.32	Conceptual + Hands on

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# Few textbooks that you can refer to:

<https://jakevdp.github.io/PythonDataScienceHandbook/>

Python Machine Learning by Sebastian Raschka and Vahid Mirjalili

The Elements of Statistical Learning