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Course Content

Session Plan - Boosting

Learning Objectives:

- Understand the basic concepts of Boosting Methods - AdaBoost, Gradient Boosting, and XGBoost.
- Learn how to use Boosting methods in Python.
- Gain perspective on the applicability of Ensemble Methods and how it can be used to solve a variety of problems.

Structure of the Session

Duration	Topic	Details
5 Min	Session structure	• Check if all the participants have watched the videos of the week • Explanation of the agenda and learning objectives of the session
25 min	Discussion of videos of the week	• Use the Discussion Questions to gauge the level of understanding of the learners on videos covered during the week and identify areas to focus on. • Make the group understand the concept of Boosting Methods, Different Metrics (Precision, Recall, Accuracy), where the group needs help.
10 min	EDA	• Discussion of data cleaning, key observations, and insights from the EDA section
50 min	Hands-on Case study	• Perform boosting techniques on the Bike Sharing data.

25 min	Extended Question	• Discuss practical applications, exchange thoughts, and challenges around Ensemble methods.
5 min	Summarize the session	• In simple bullet points, cover the contents covered during the session

Important points to note:

- In the hands-on section, kindly **do not** spend more than **10-15 minutes on EDA**. It is important that the focus stays on the implementation of Ensemble Models and not too much on the EDA section as it covers the concepts which are similar to the concepts discussed multiple times previously. We have noticed that if the plan is not followed the session exceeds the time limit.
- Kindly **do not** run the code cells containing the Hyperparameter Tuning using GridSearchCV during the session, since it takes considerable time to run.
- The aim of the discussion on XGBoost is to cover the core concepts rather than diving deep into mathematical details. If needed, the appendix section can be discussed briefly.
- The concepts of bias and variance will be covered in more detail in subsequent courses.
- Be well prepared for the session, ensure to watch all the videos, related codes, and datasets. (It renders the Mentored Learning session of no use if we are not completely prepared).
- Log in for your session 5 min before and make sure you are ready with all the material to be used for the session.

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