



Temas Selectos de Aprendizaje Automático

Sesión I

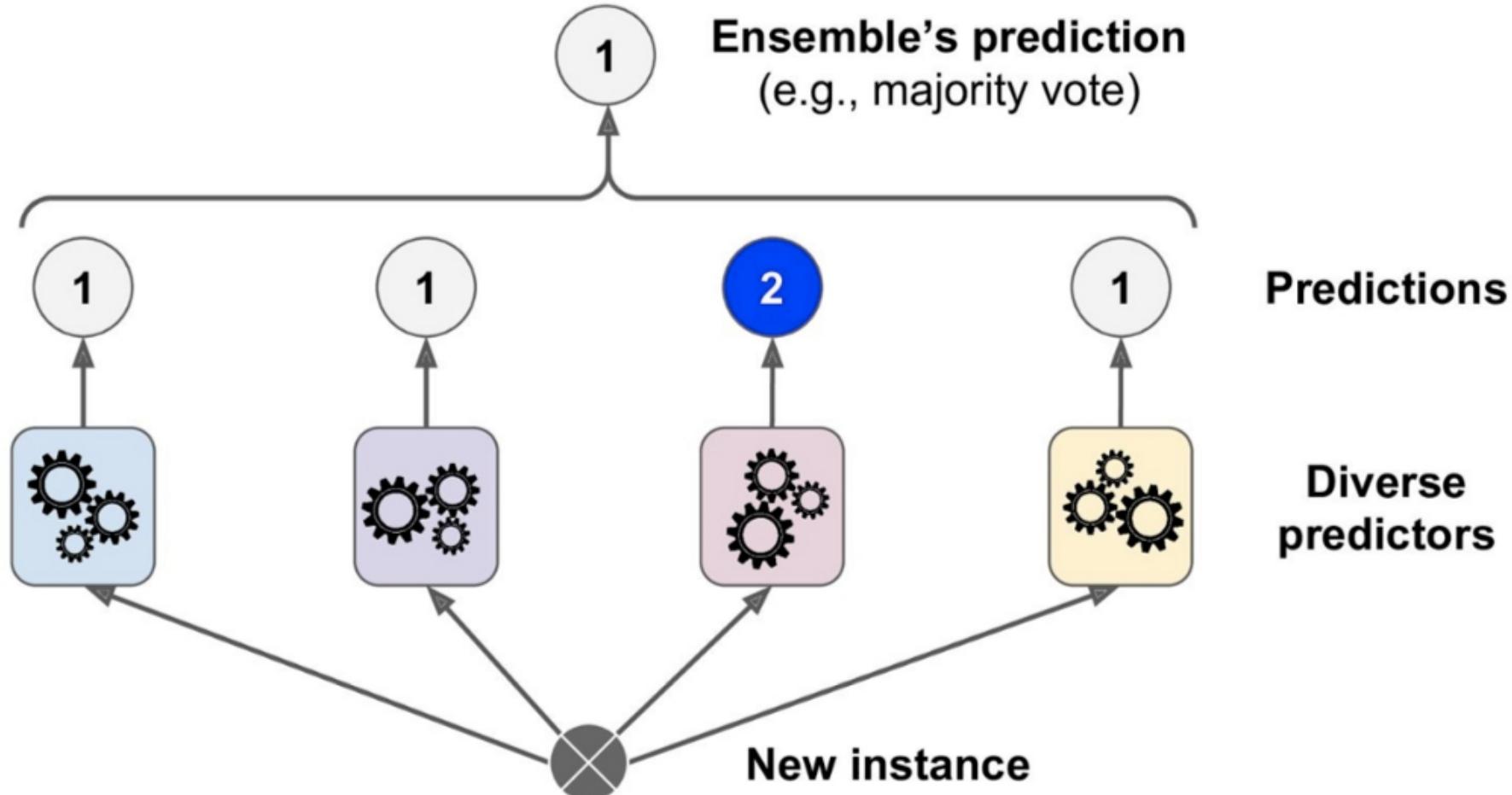
PhD. Edwyn Javier Aldana Bobadilla

Agenda (1)

Topics	Date
<ul style="list-style-type: none">• Ensambling Methods Introduction<ul style="list-style-type: none">• Fundamentals• Voting, Stacking and Bagging approaches• Python Exercise• Random Forest another ensambling approach• Python Exercise• Boosting Approach<ul style="list-style-type: none">• Fundamentals• Python Exercise• Gradient Boosting Classifier<ul style="list-style-type: none">• Fundamentals• Python Exercise• Light Gradient Booting Machine<ul style="list-style-type: none">• Fundamentals• Python Exercise	June 6, 17:00-20:00

Ensambing Methods

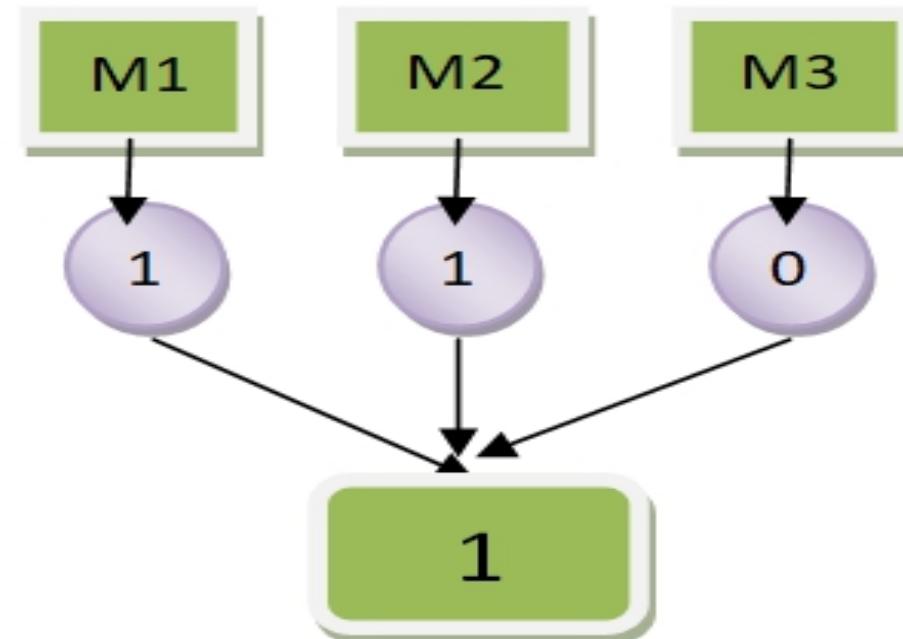
IDEA:



source: <https://www.kdnuggets.com/2019/01/ensemble-learning-5-main-approaches.html>

Ensambling Methods

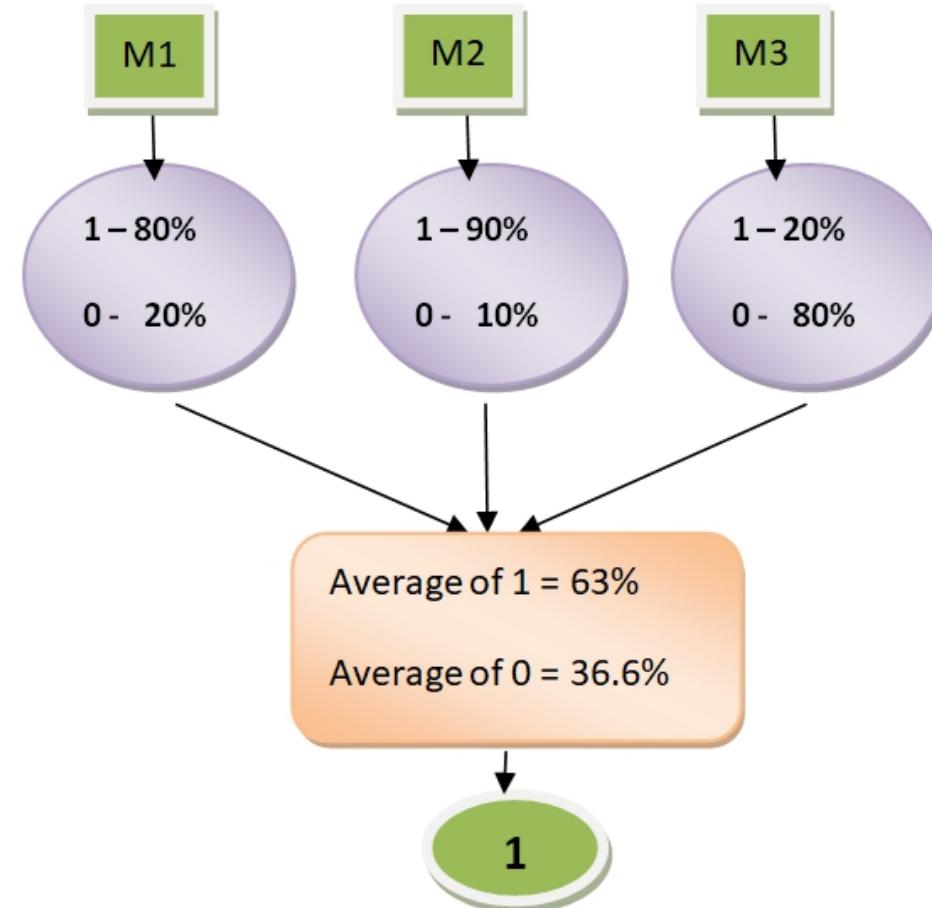
Voting



Hard Voting

Ensambling Methods

Averaged Voting





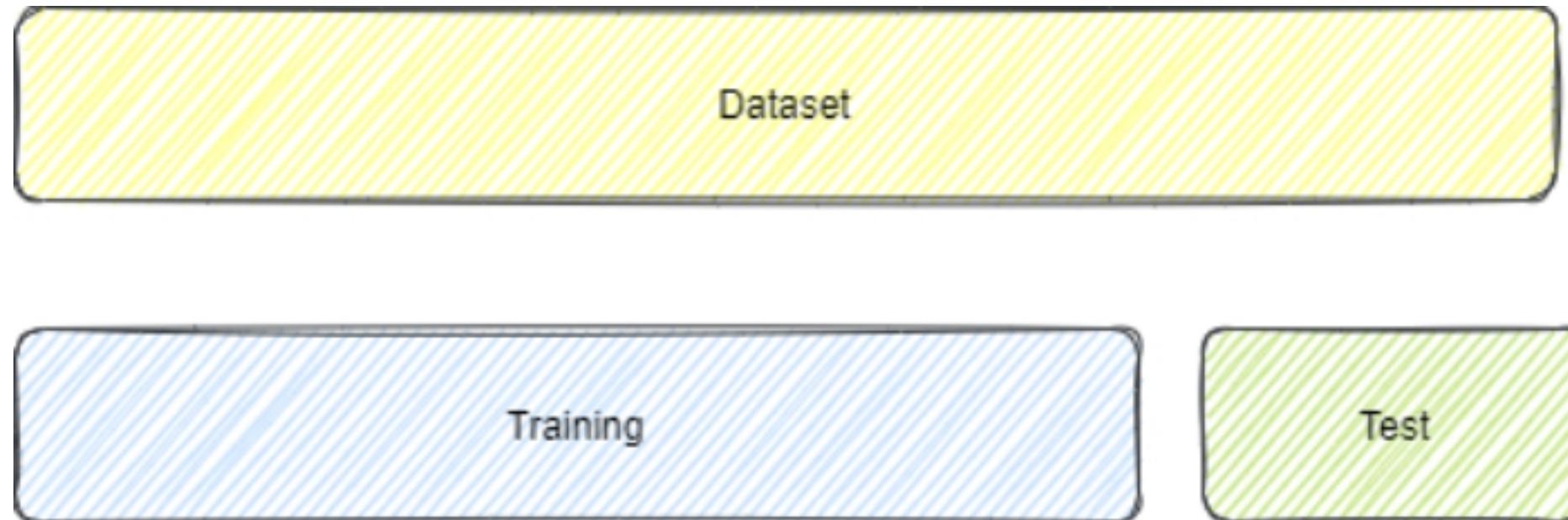
Ensambling Methods

Stacking

A large, horizontal, yellow rectangular box with diagonal hatching. The word "Dataset" is centered in the middle of the box in a dark gray font.

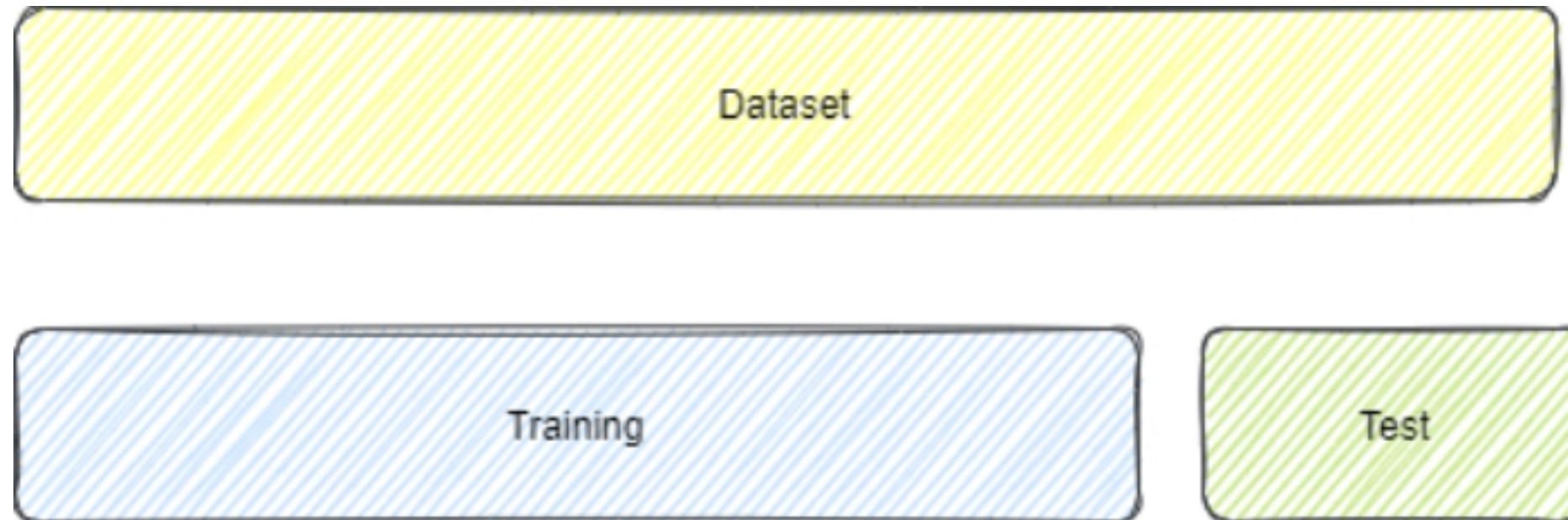
Ensambling Methods

Stacking



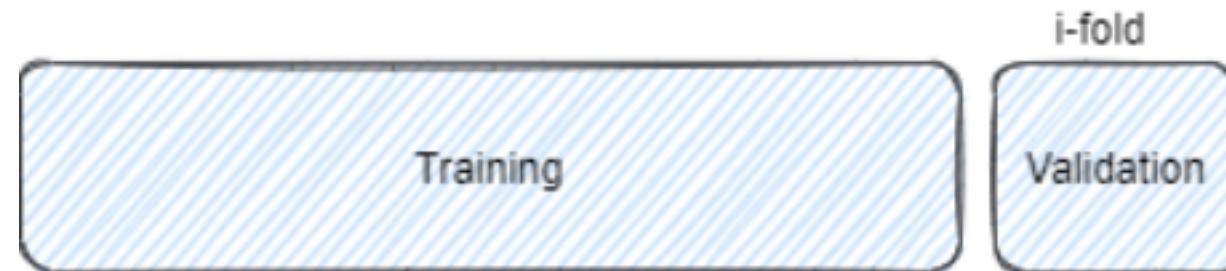
Ensambling Methods

Stacking



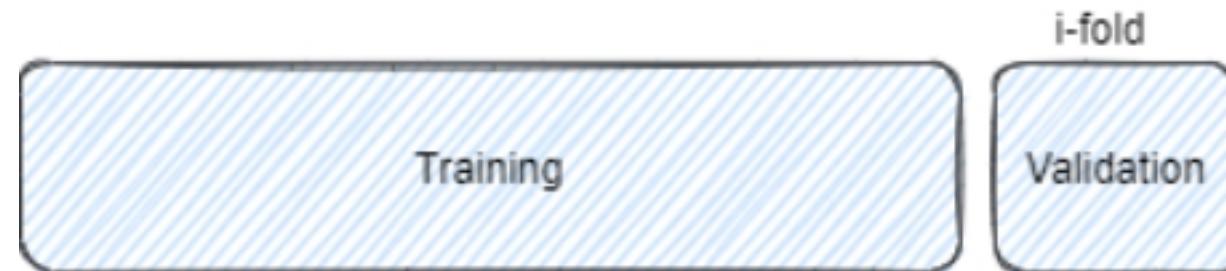
Ensambling Methods

Stacking



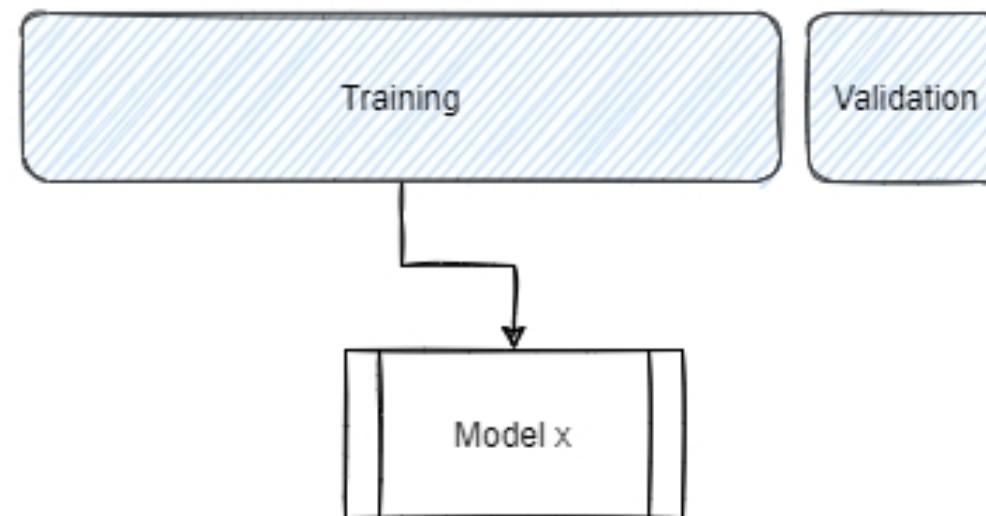
Ensambling Methods

Stacking



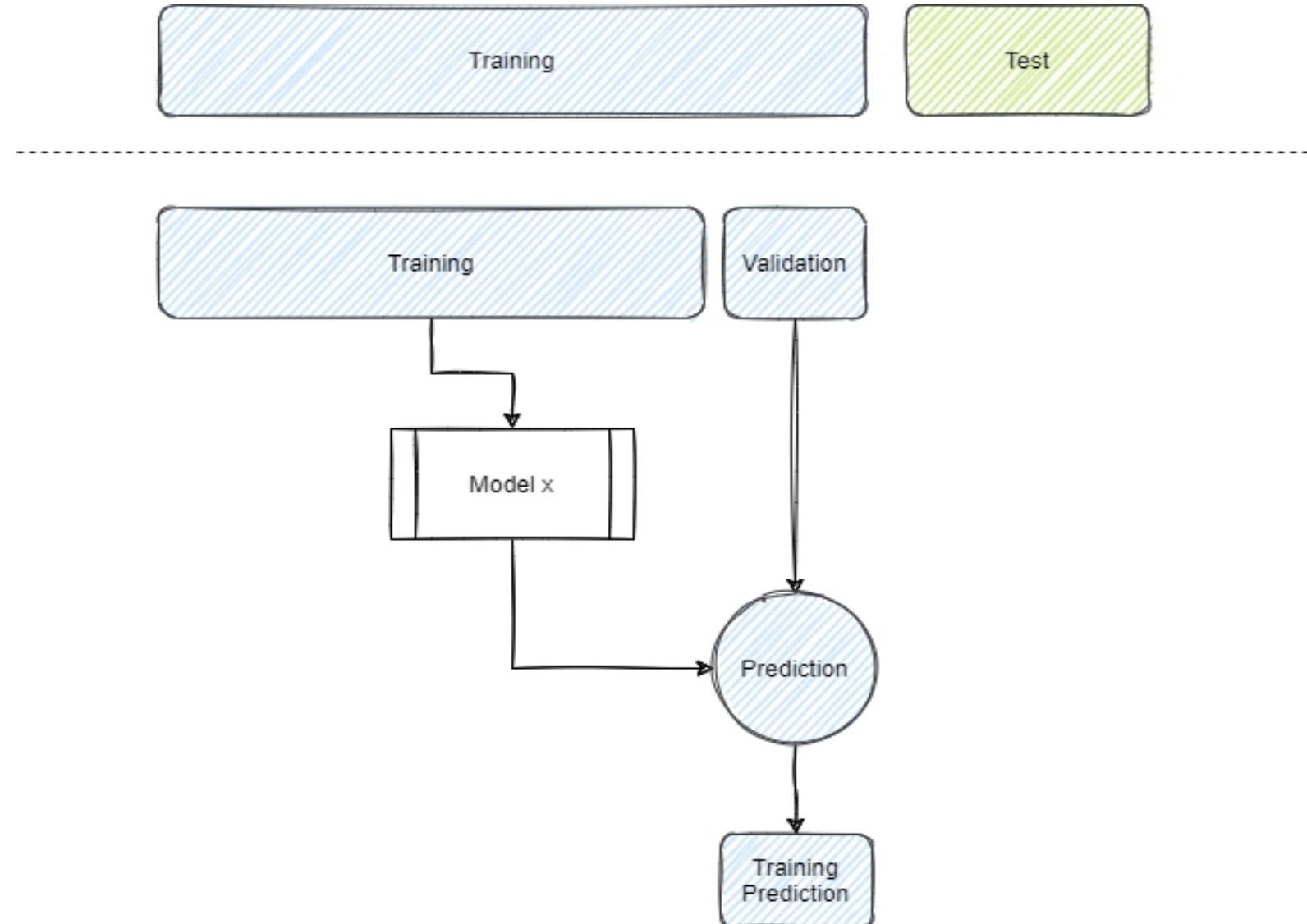
Ensambling Methods

Stacking



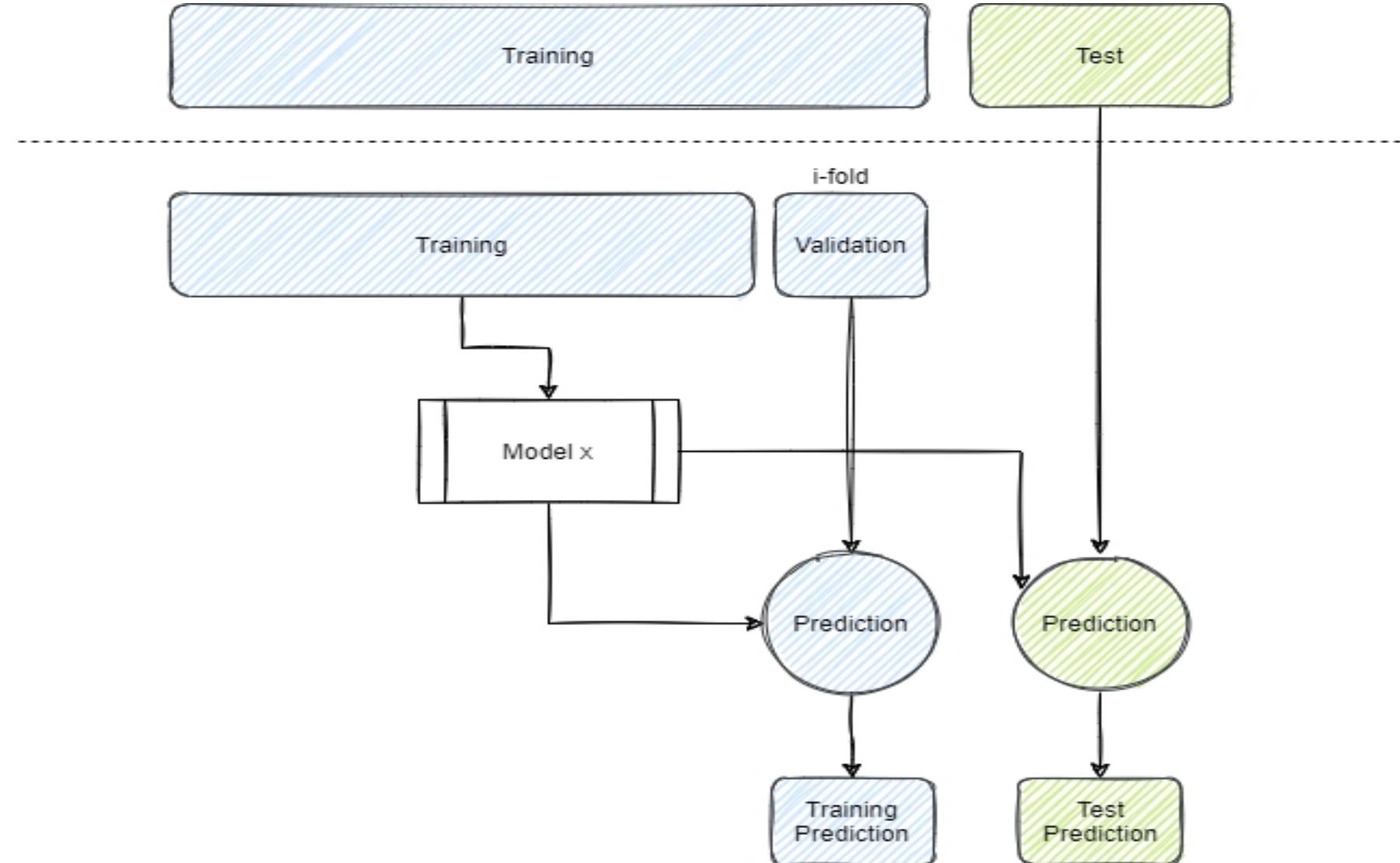
Ensambling Methods

Stacking



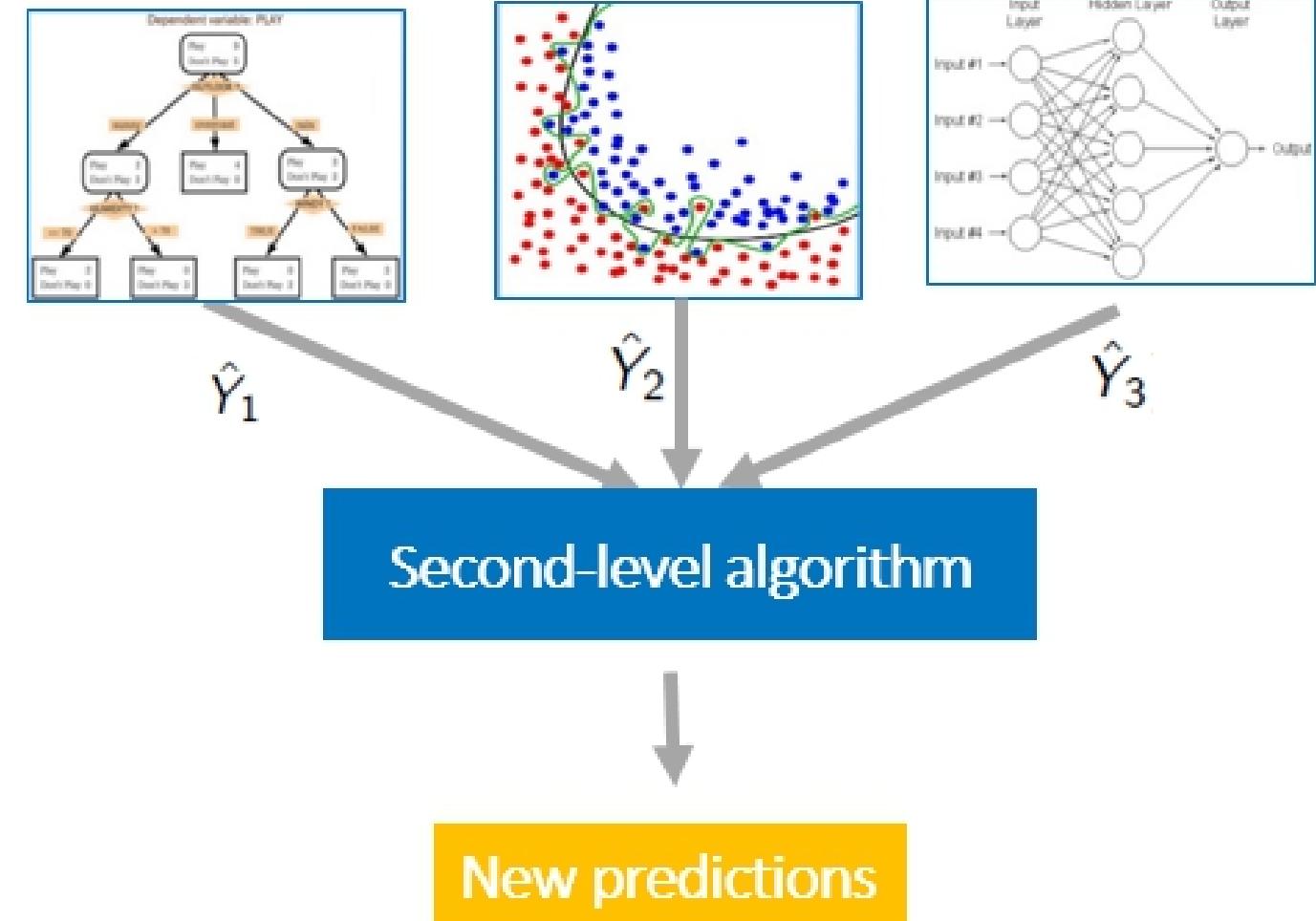
Ensambling Methods

Stacking



Ensambling Methods

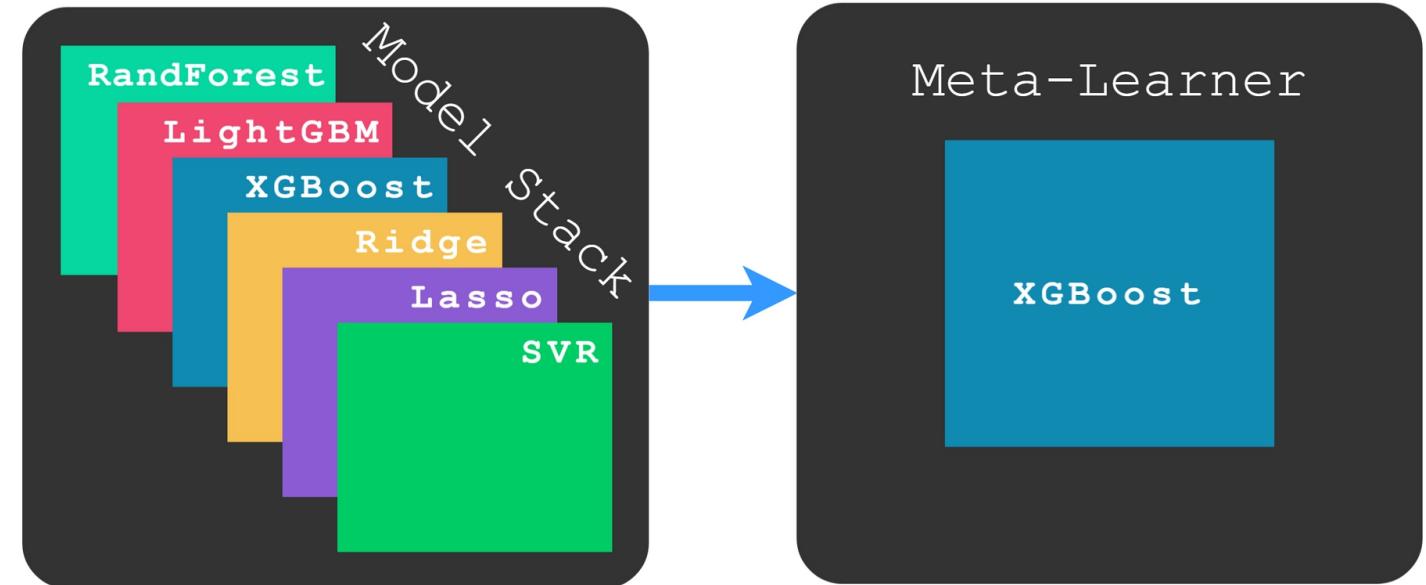
Stacking



Ensambling Methods

Model Sta

**Model Stacking with Layers:
A Machine Learning Ensemble Technique**





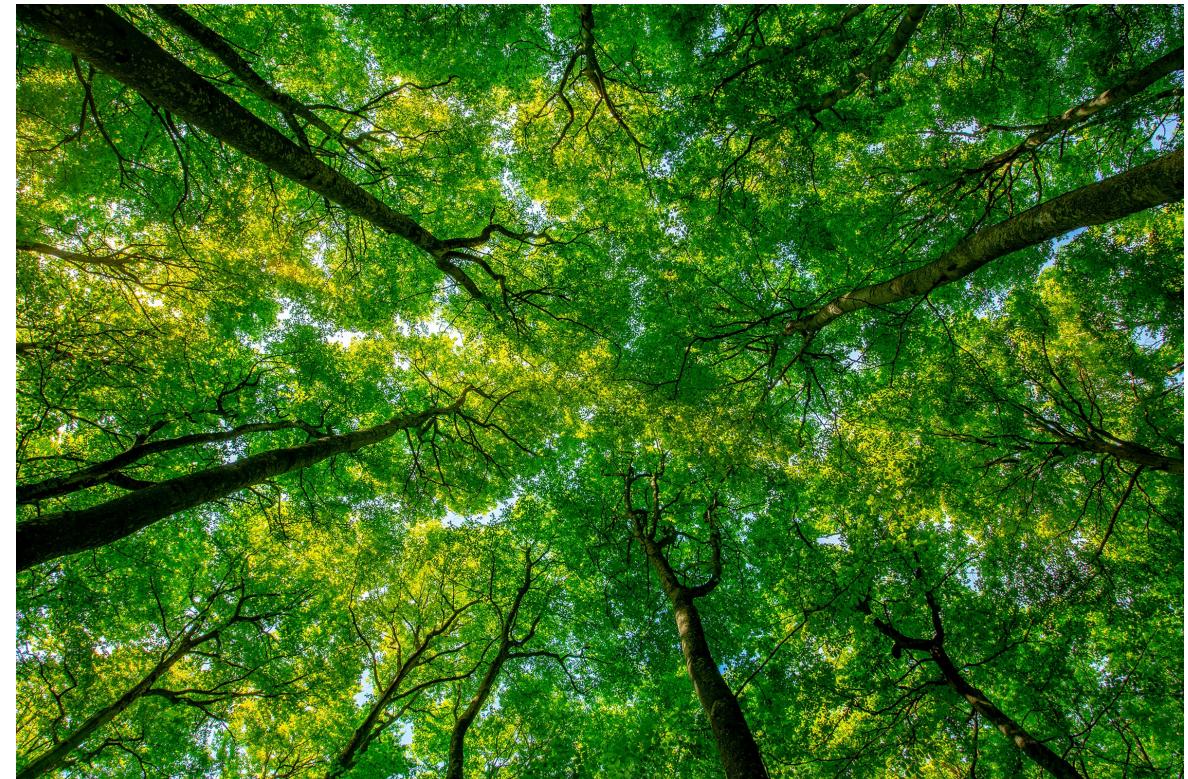
Exercise 1:

1. Review the foundations of **ensambling methods** based on the script provided by the instructor
2. Discuss the results

Ensambling Methods

Random Forest and Ensambling Methods

- Random Forest **merges a collection of independent decision trees** to get a more accurate and stable predictions.
- An ensambling approach **combine several machine learning models**.





Exercise 2:

1. Review the effectiveness of **Random Forest** based on the script provided by the instructor
2. Discuss the results