

A red square logo with a white border. Inside the square, the text "Decision Trees, Bagging, & Boosting" is written in white, bold, sans-serif font, centered and stacked vertically.

Decision Trees, Bagging, & Boosting

Pierre Damiba

Lamba School Project 2

When should you use decision trees?

- You use them everyday!
- In fact, your decision to attend Lambda was probably the result of decision tree
- Non-linear relationships
- Buy or Sell
- Strong Buy, Buy, Hold, Sell

Why do we need Ensemble Methods?

- Overfitting...
- Not generalizable

Bagging

- Big number of **strong** learners trained at the same time
- Like a board meeting
- Then decisions are averaged, or smoothed out
- Individually, they are too complex, together, they are the perfect mix
- Random Forest

Boosting

- Big number of **weak** learners trained at the same time
- Lemmings
- Each learner tries to correct the mistakes of the others
- Alone, they aren't very useful, together, they can make a strong model
- XGBoost