Decision Trees

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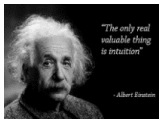
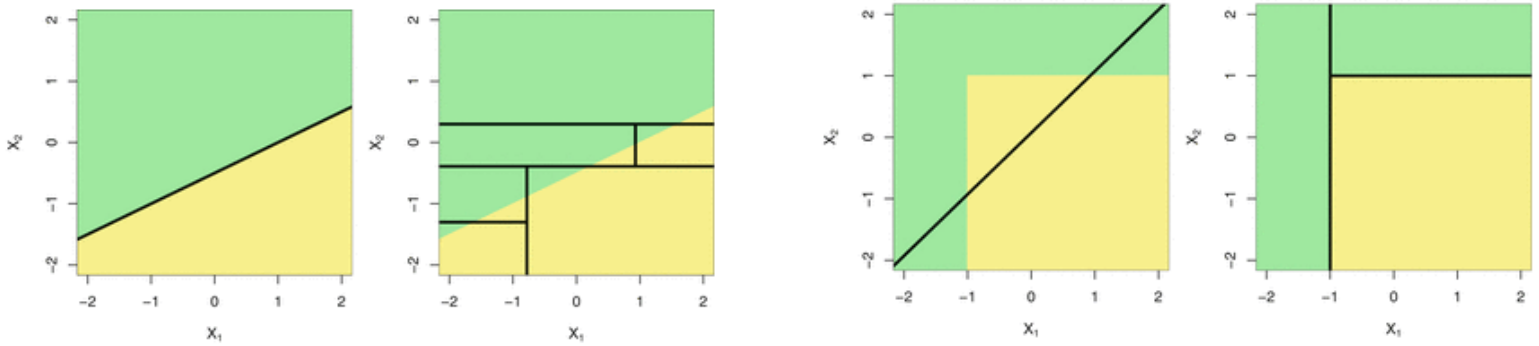


Decision Trees: Intuition

- Decision trees come in two flavors:
  - **Regression Trees** – the outcome is quantitative → solve similar problems than linear regression models
  - **Classification Trees** – the outcome is categorical → solve similar problems than logistic, LDA and QDA models
- Both types of trees are similar in principle in that **observations** are **split** recursively into nested **"regions"** to guide the **prediction** of new observations into one the resulting regions.
- Which model type is **better**, tree or linear? It **depends**. The 2 left diagrams below show both models when the **"true"** relationship between 2 variables is **linear**. The 2 **right** diagrams they are **not**.



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