

ML Section 1.2: Decision Tree Learning

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1 Intro

- Training examples are represented as feature-value vectors.
- Each feature denotes some property of an example.
- Feature values can be continuous, but will be discretised beforehand.

2 Decision Tree Learning Algorithm

1. If training examples at the root node are perfectly classified, then stop.
2. Choose feature to test at root node.
3. A child of the root node is created for each value of the root feature.
4. Training examples are sorted to the children according to feature test.
5. Repeat steps 1-5 for each child (viewing it as the root of the new subtree).

2.1 Feature Choice

Choose the feature which is most useful for classifying examples. The quality measure for choosing a feature is the *information gain* — measuring how well a given feature separates the training examples to their categories.