DECISION PATTERNS

Rules

Practical Machine Learning (with R)

UC Berkeley

Rules

- What is a rule?
- Propositional logic statement
- Antecedent and consequent
- If this … then …
- Can be complex
  - Use multiple conditions
- Analogous to a sets
  - Typically disjoint sets not allowed in single rule

ZeroR

OneR

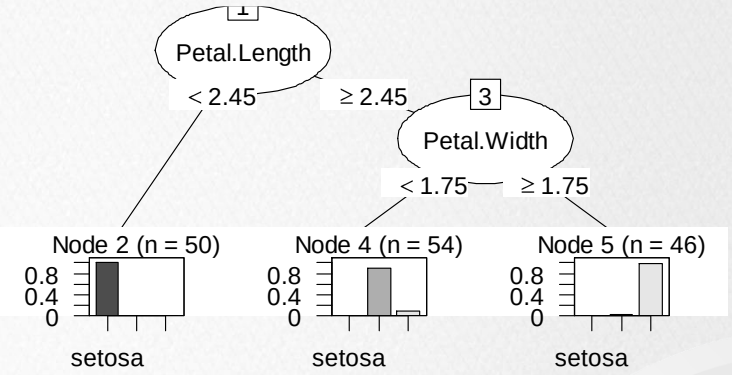
RIPPER

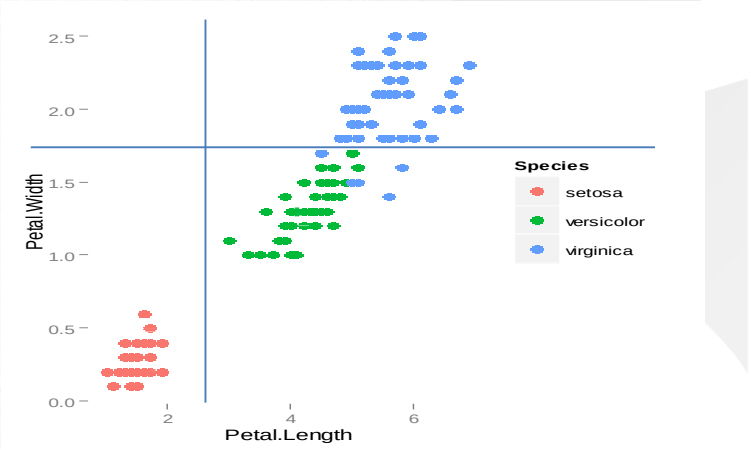
1. Grow
2. Prune
3. Optimize

Stopping Criteria

Rules from Decision Trees

- One rules result from each terminal node.
- Rule is defined by the path through the tree.
- Rules do not have to be pure.





RULES

- As derived from trees often have repeated conditions

```
NumCarbon > 3.777 &
SurfaceArea1 > 0.978 &
SurfaceArea1 > 8.404 &
FP009 <= 0.5 &
FP075 <= 0.5 &
NumRotBonds > 1.498 &
NumRotBonds > 1.701
```

Rules and their conditions live on their own, conditions can be adjusted to change bias-variance trade-off