

CSCI 5582

Artificial Intelligence

Lecture 19
Jim Martin

CSCI 5582 Fall 2006

Today 11/13

- Decision Lists
- Break
 - Quiz review
 - New HWs
- Boosting

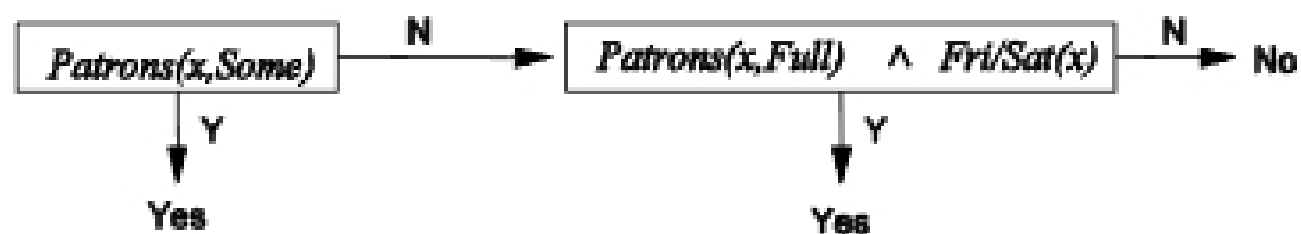
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Decision Lists

- Each element in the list is a test that an object can pass or fail.
- If it passes, emit the label associated with the test.
- If it fails, move to the next test.
- If an object fails all the tests emit a default answer.
- The tests are propositional logic statements where the feature/value combinations are atomic propositions.

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Decision Lists



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Decision Lists

- Key parameters:
 - Maximum allowable length of the list
 - Maximum number of elements in a test
 - Logical connectives allowed in the test
- The longer the lists, and the more complex the tests, the larger the hypothesis space.

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Decision List Learning

function DECISION-LIST-LEARNING(*examples*) **returns** a decision list, *No* or failure

if *examples* **is** empty **then** **return** the value *No*

t ← a test that matches a nonempty subset *examples*, of *examples*
 such that the members of *examples*, are all positive or all negative

if there is no such *t* **then** **return** failure

if the examples in *examples*, are positive **then** *o* ← *Yes*

else *o* ← *No*

return a decision list with initial test *t* and outcome *o*

 and remaining elements given by DECISION-LIST-LEARNING(*examples* − *examples*)

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