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Fuzzy Classifier

Assignment 2

## 1. What is the AND operator in your implementation?

In our solution we allow the user to specify which operator should be used in calculations when intersection between fuzzy sets occurs. The possible values are two – min or prod. The “min” option means that the built-in function for minimum will be used and the “prod” option means that “product” implementation will be used – which is in fact multiplication.

## 2. What is the OR operator in your implementation?

In our solution we allow the user to specify which operator should be used in calculations when union between fuzzy sets occurs. The possible values are two – max or probor. The “max” option means that the built-in function for maximum will be used and the “probor” option means that “probability or” implementation will be used.

## 3. What is the data flow from inputs to decision given the normalized attribute values as (0.3, 0.8, 0.2, 0.7)?

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  | .67 |  |
|  |  |  |  |
|  | .5 |  |  |

Rule #1: min(max(0.5, 0.5), max(0.5, 0.5), max(0.33, 0), 0.65) = min(0.5, 0.5, 0.33, 0.75) = 0.33

Rule #2: min(max(0.67, 0.33), 0) = 0

Rule #3: min(max(0, 0.5), 0, 0.25) = 0

Rule #4: min(0.5, max(0, 0.5), 0.67, 0.25) = 0.25

The example is classified as **iris setosa**.

## 4. What is the accuracy of your implemented fuzzy classifier on the Iris data?

~ 0.78% using min/max

~ 0.69% using prod/probor