

## \* Find S-Algorithm.

The Find S-Algorithm is a basic concept of learning algorithm in machine learning. The Find S-algorithm Find the most specific hypothesis that fits all the positive example we have to note here that the algorithm consider only those positive training example

## \* Algorithm

Step 1:- Initialize  $h$  to the most specific hypothesis in  $H$ .

Step 2:- For each positive training instance  $x$   
For each attribute constraint  $a$  in  $h$   
If the constraint  $a$  is satisfied by  $x$   
then do nothing.

Else replace  $a$  in  $h$  by the next more general constraint that is satisfied by  $x$ .

Step 3:- output hypothesis  $h$ .

Example	colour	Toughness	Fungus	Apperance	Poisonous
1	Green	Hard	NO	Wrinkled	Yes
2	Green	Hard	yes	Smooth	No
3	Brown	soft	No	Wrinkled	NO
4	Orange	Hard	NO	Wrinkled	Yes
5	Green	Soft	yes	Smooth	yes.

complete for :  
Algorithm  
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And we consider the hypothesis to be a more specific hypothesis. Hence our hypothesis would be  $h = \{\phi, \phi, \phi, \phi, \phi\}$

consider example 1:-

$h = \{\text{Green, Hard, No, wrinkled}\}$

consider example 2:-

$h = \{\text{Green, Hard, no, wrinkled}\}$

consider example 3:-

$h = \{\text{Green, Hard, no, wrinkled}\}$

Here we see that above 2 example has a negative outcomes. Hence we negate this example and our hypothesis remain the same.

consider example 4:-

$h = \{?, \text{Hard, No, wrinkled}\}$

consider example 5:-

$h = \{?, ?, ?, ?\}$

Hence for the given data the final hypothesis would be

Final hypothesis :  $h = \{?, ?, ?, ?\}$