

Decision Tree Clouds: cumulus, nimbostratus, stratus, cirrus

Perspective:

I phrased the questions so that they would be easy to answer by somebody who was looking directly at the specified cloud and had some general knowledge about physical properties of the clouds. I also assumed that the answers would be answered correctly and ignored human error.

Selected Questions:

- Precipitation/Moisture (Yes or No)?

This question was selected because it splits the data into two possible groups. Both Stratus and Nimbostratus clouds contain moisture and are able to produce precipitation while cirrus and cumulus clouds do not.

- Density (Thin or Puffy)?

This question would differentiate Cumulus and Cirrus clouds. Cirrus clouds are very thin and wispy while the other clouds would probably be considered puffy. This question would only be useful if the cloud did not produce precipitation.

- Elevation (Very low/Near the Ground or High Elevation)?

This question would differentiate Nimbostratus and Stratus clouds. Stratus clouds are only in the stratosphere which is 0-2km from the ground. This is very close to the ground relative to other clouds. Nimbostratus clouds are much higher in the air and are the rain clouds we generally think of. This question would only be useful if the cloud did produce precipitation.

Rejected Questions:

- Color (Gray or White)?

This question splits the data in the exact same way as “precipitation” because both of the gray clouds can produce precipitation and the two white clouds cannot produce precipitation. Since color is more subjective than ability to produce precipitation, I rejected this question.

- Puffy (Yes or No)?

This question is very subjective because many people believe that all clouds are puffy. This could cause people to never answer “no.” Since people are answering these questions from their perspective it could become a useless question. For this reason I rejected the question.

- Height (Tall or Short)?

The height of a cloud is generally an important factor in the classification of clouds, so at first I thought it would be a good question. However, after researching the four choices of clouds that were being classified, this question was not useful in classification because none of the clouds are classified as “tall.”

- entropy
- questions (first tier, second tier)
- data being used (training data, grid format -> see checked off)
- potter/audience Qs