Department of Computer Science

California State University, Channel Islands

MATHCOMPPH-546: PATTERN RECOGNITION

Lesson 1 phys546 Introduction HW_1

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1.1 List a number of applications of classification, additional to those mentioned in the text.
Ans.

- Websites utilize classification to show visitors the most relevant ad based on their browsing history and cookies saved on their computer.
- Many apps employ classification to categorize and perhaps identify a person's speech.
- To ensure that a video reaches the correct audience, YouTube employs classification to determine the genre and annotations for it.

1.2 Consider the data of four adults, indicating their weight (actually, their mass) and their health status. Devise a simple classifier that can properly classify all four patterns.

Weight (Kg)	Class Label
50	Unhealthy
60	Healthy
70	Healthy
80	Unhealthy

How is a fifth adult of weight 76 kg classified using this classifier?
Ans. As per above table, fifth adult of weight 76 kg classified using this classifier as **Unhealthy.**

1.3 Consider the following items bought in a supermarket and some of their characteristics:

Item No.	Cost ($)	Volume(cm^3)	Color	Class Label
1	20	6	Blue	Inexpensive
2	50	8	Blue	Inexpensive
3	90	10	Blue	Inexpensive
4	100	20	Red	expensive
5	160	25	Red	expensive
6	180	30	Red	expensive

Which of the three features (cost, volume and color) is the best classifier?
Ans. The best classifier among these three features is cost.

1.4 Consider the problem of classifying objects into circles and ellipses. How would you classify such objects?

Ans. By measuring the distance between the center and all of the circumferential points, we may determine if the object is a circle or an ellipse.