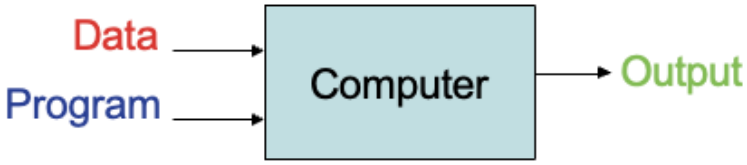
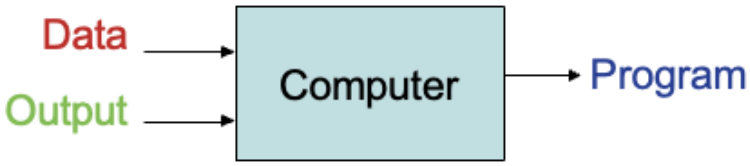
Machine Learning

Seminar 1

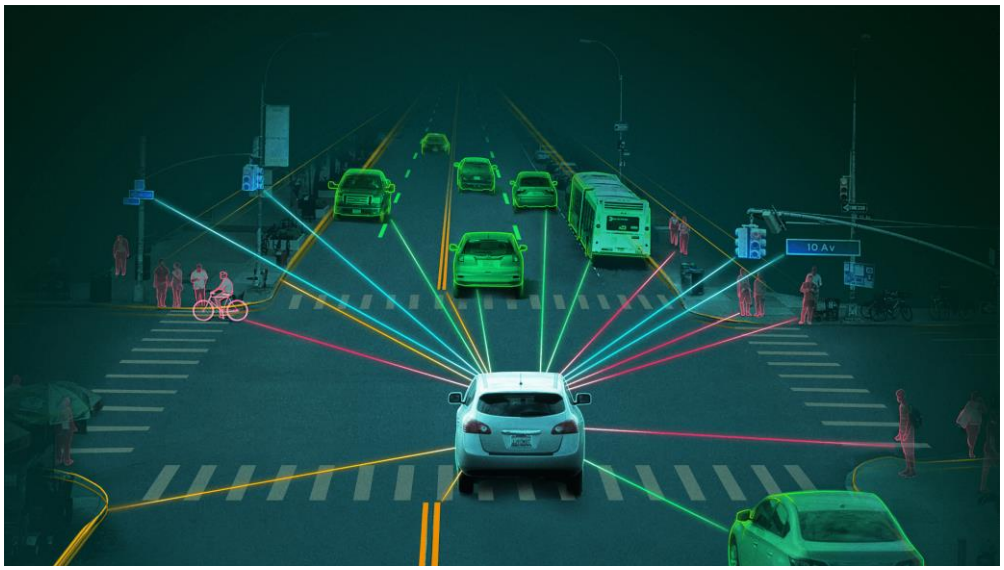
1. Explain what machine learning is and name some applications of machine learning

2. Which of the following figure represents traditional machine learning? Which represents machine learning? What is the difference?

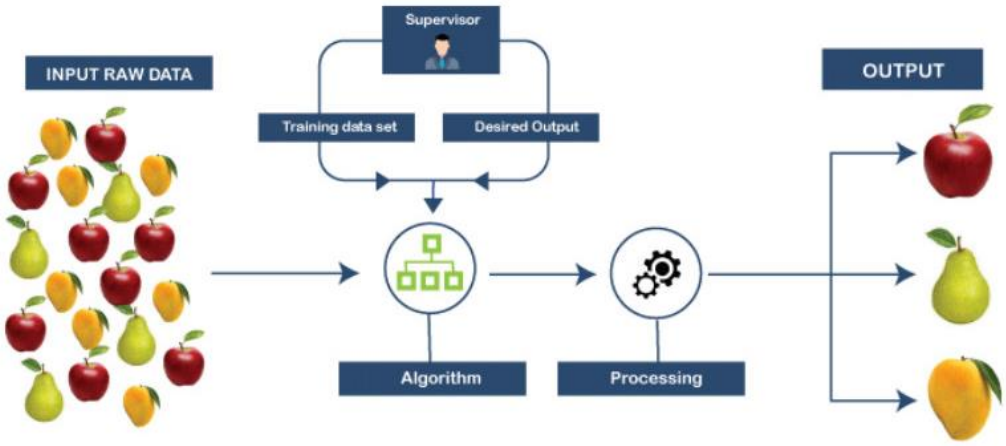


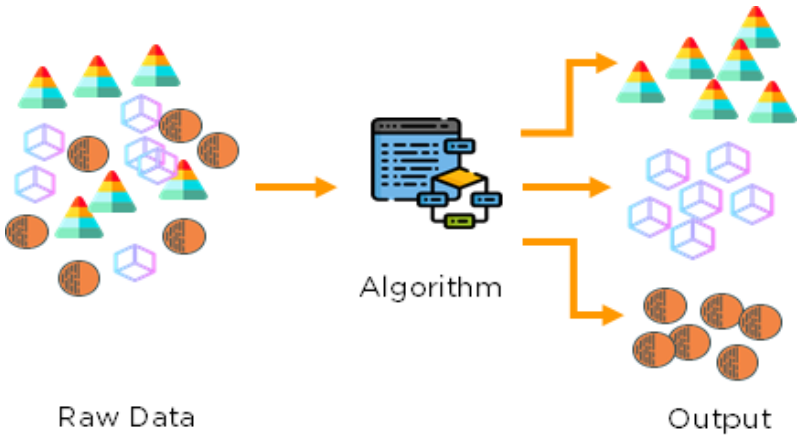


3. Name the ML techniques relevant to the application in the figure.



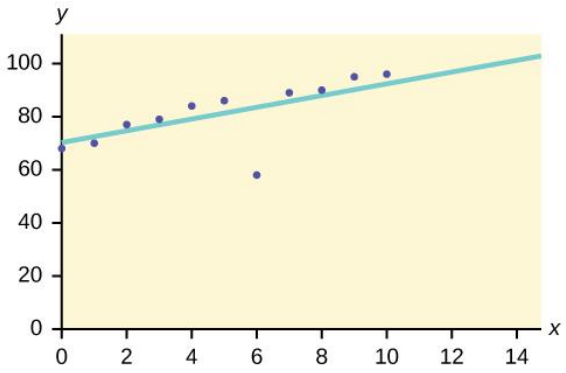
4. What are supervised learning and unsupervised learning? Which of the following figure is a supervised learning application? Which is an unsupervised learning application?





4. An outlier is an observation that lies an abnormal distance from other values in a random sample from a population. The scatter plot shows the relationship between hours spent studying and exam scores. The line shown is the calculated line of best fit. The correlation coefficient is 0.69.

- Do there appear to be any outliers?
- What effect did the potential outlier have on the line of best fit?
- How can we pre-process the data to remove the outliers?



5. Imagine that you work for a company that plans to develop an ML product, and you are asked to recommend a promising ML product. Which ML application will you choose and why?

You may cover the following points:

- A brief introduction of this ML product.
- Why you choose this product. Why you think it is promising?
- Other details you would like to share, e.g., its development history, techniques.