

# Machine Learning Introduction

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CSE451:Neural Network & Fuzzy Logic

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“A baby learns to crawl, walk and then run. We are in the crawling stage when it comes to applying machine learning.”

**-Dave Waters**

# Machine Learning is Like a Baby



# They Both Learn



Experiences  
Matter

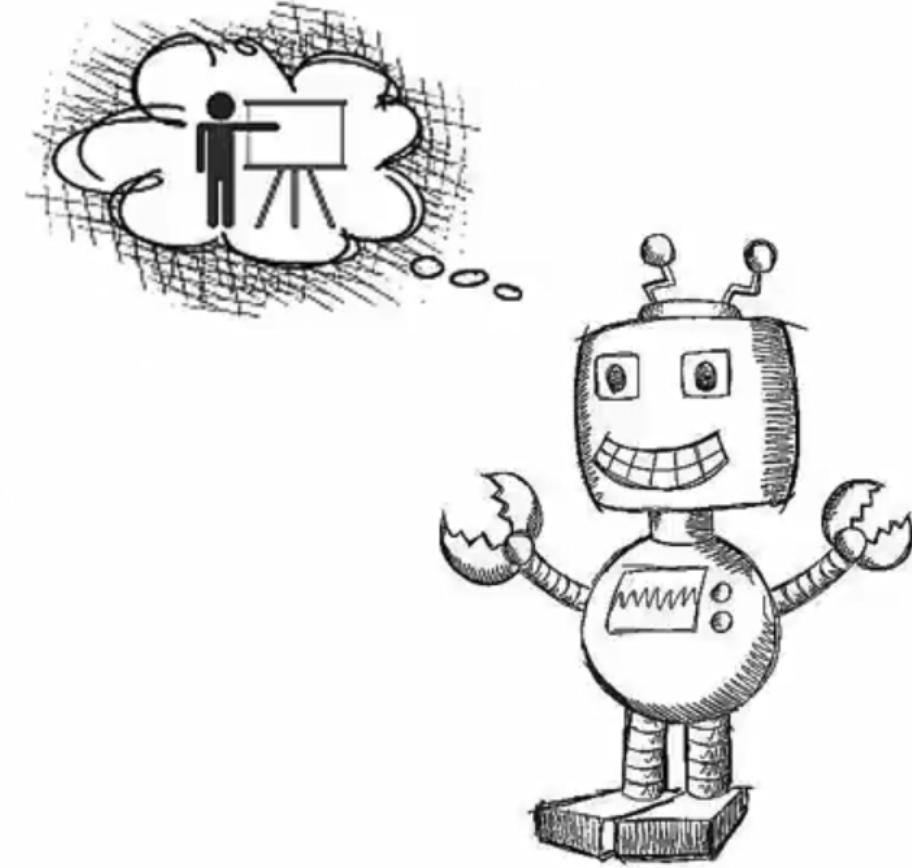


# Feedback Is Important

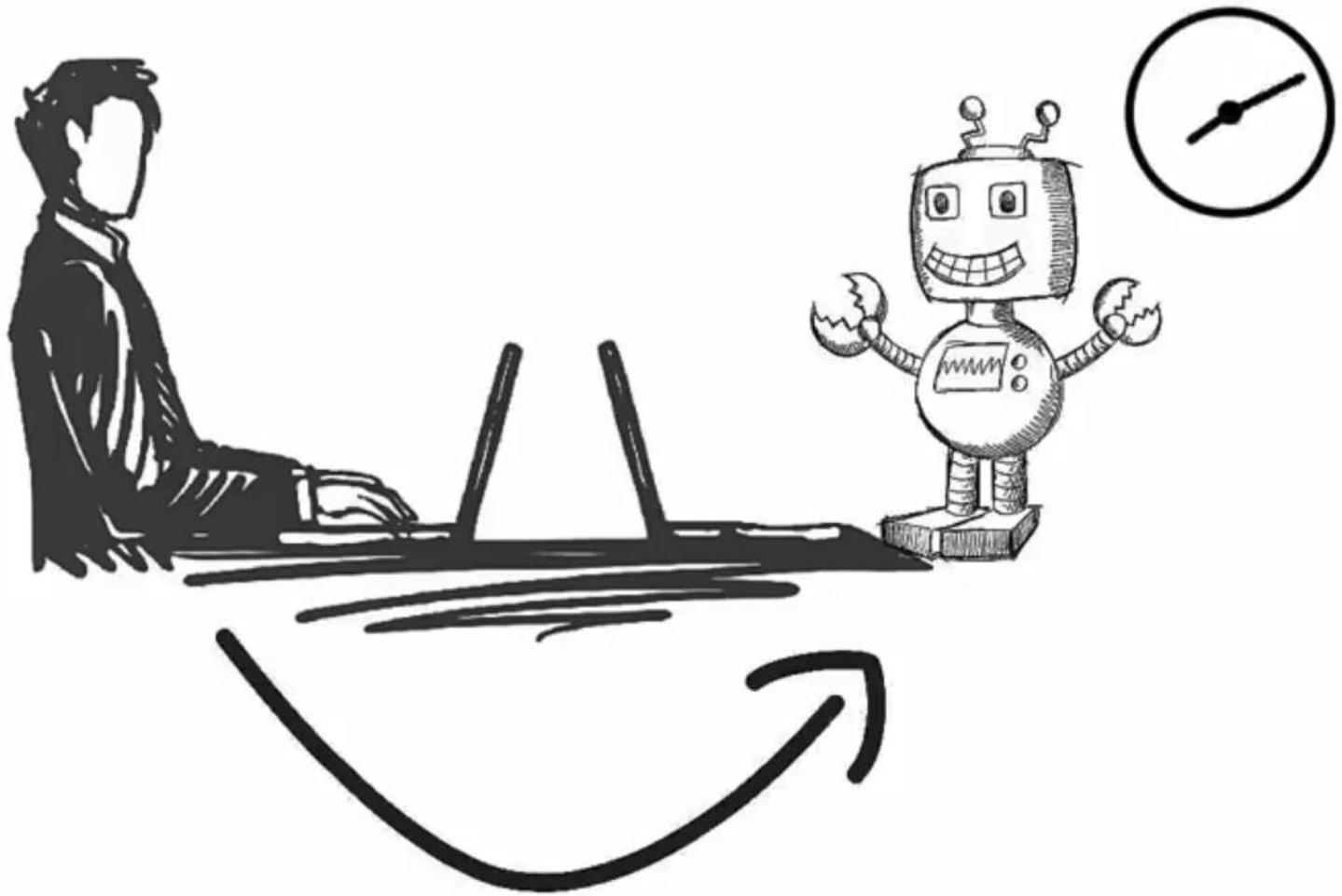




**HUMANS LEARN FROM  
PAST EXPERIENCES**



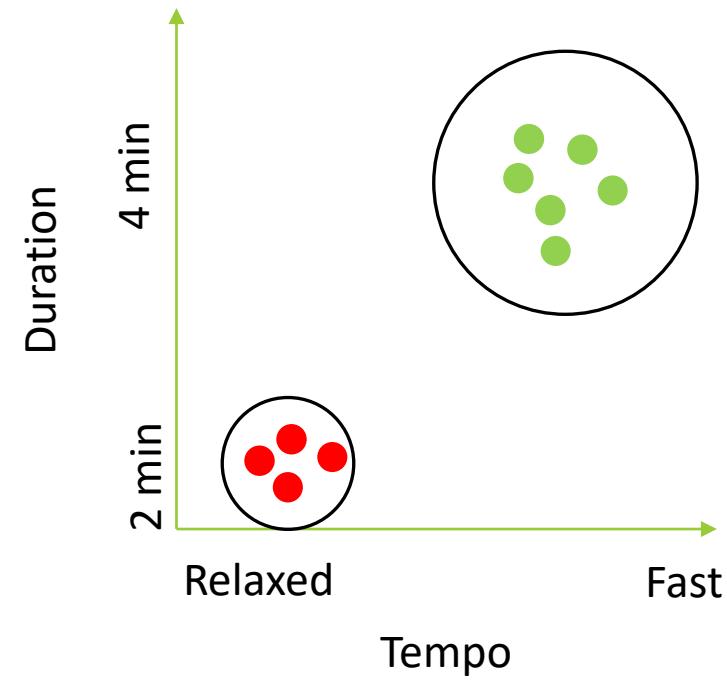
**MACHINES FOLLOW INSTRUCTIONS  
GIVEN BY HUMANS**



**WHAT IF HUMANS CAN TRAIN THE MACHINES...**

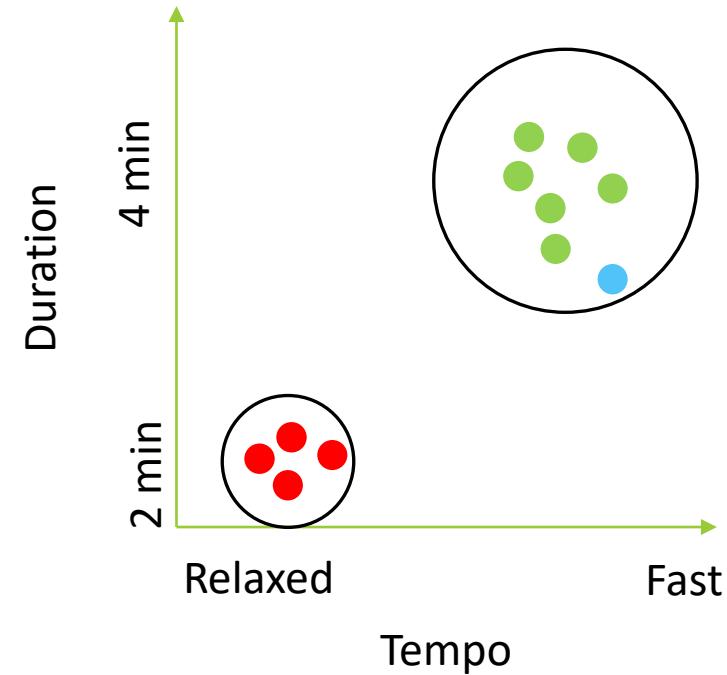


- Genre
- Tempo
- Duration



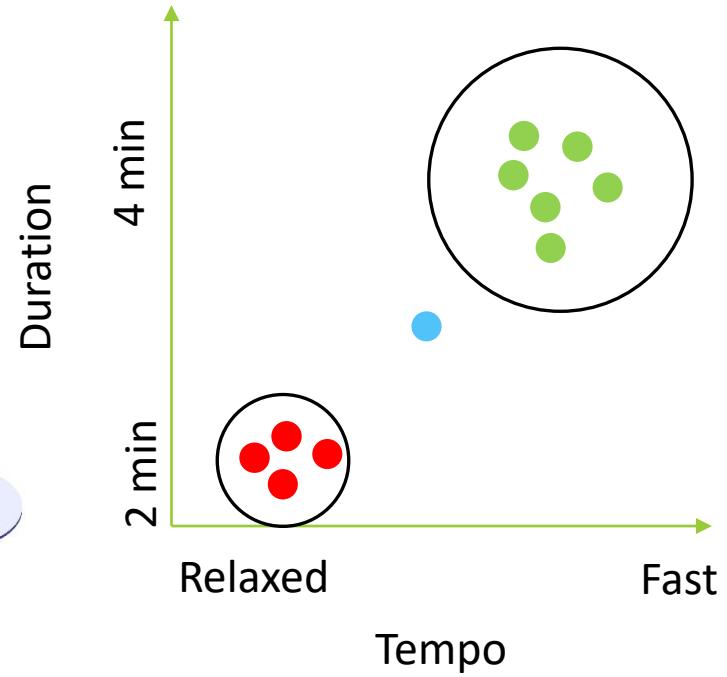


Fast Tempo  
Duration – 5 minutes



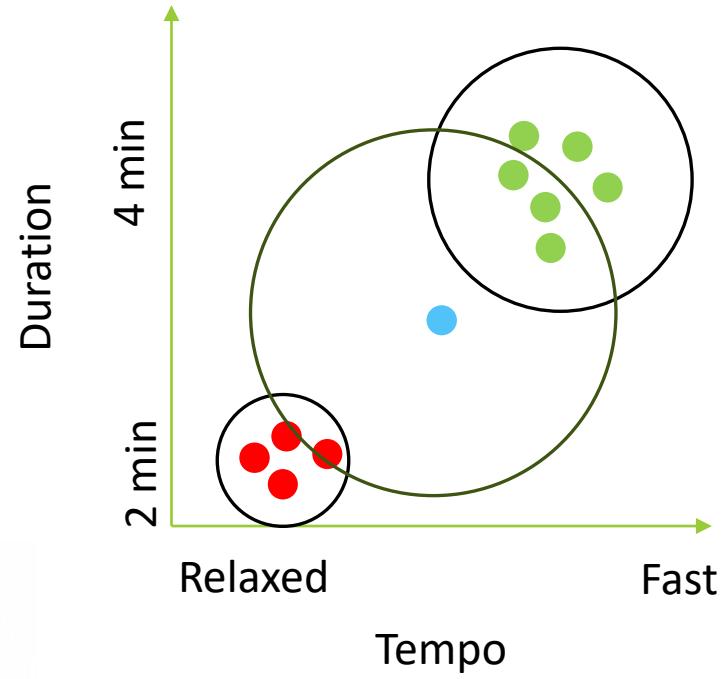


Medium Tempo  
Duration – 3 minutes





Medium Tempo  
Duration – 3 minutes



**K-nearest neighbor**

# How to confuse machine learning



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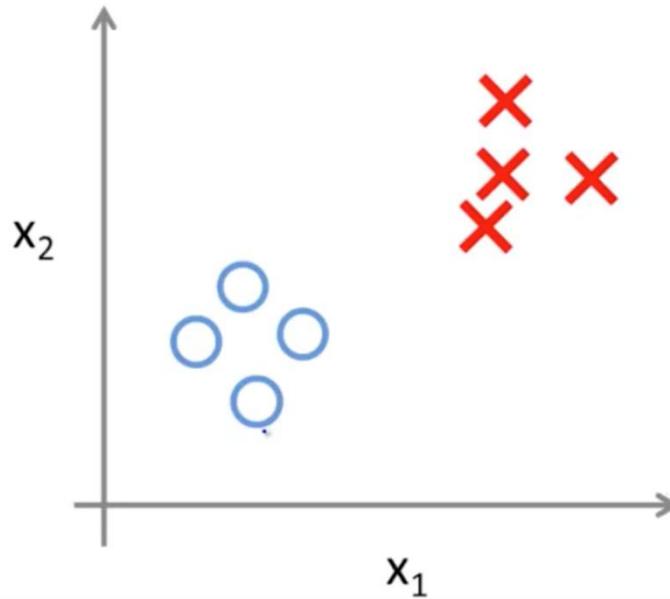
# Supervised Learning

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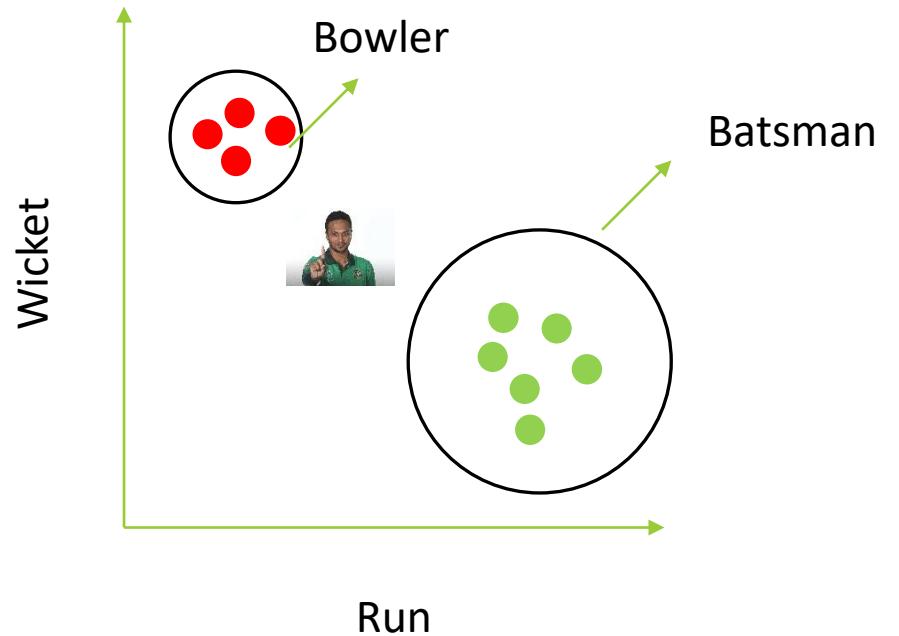
- Involves a teacher guiding machine learning using labeled data.
- Algorithm analyzes labeled training data to produce accurate outcomes.
- Goal is accurate predictions on new, unlabeled data.

K-nearest neighbor

Supervised Learning

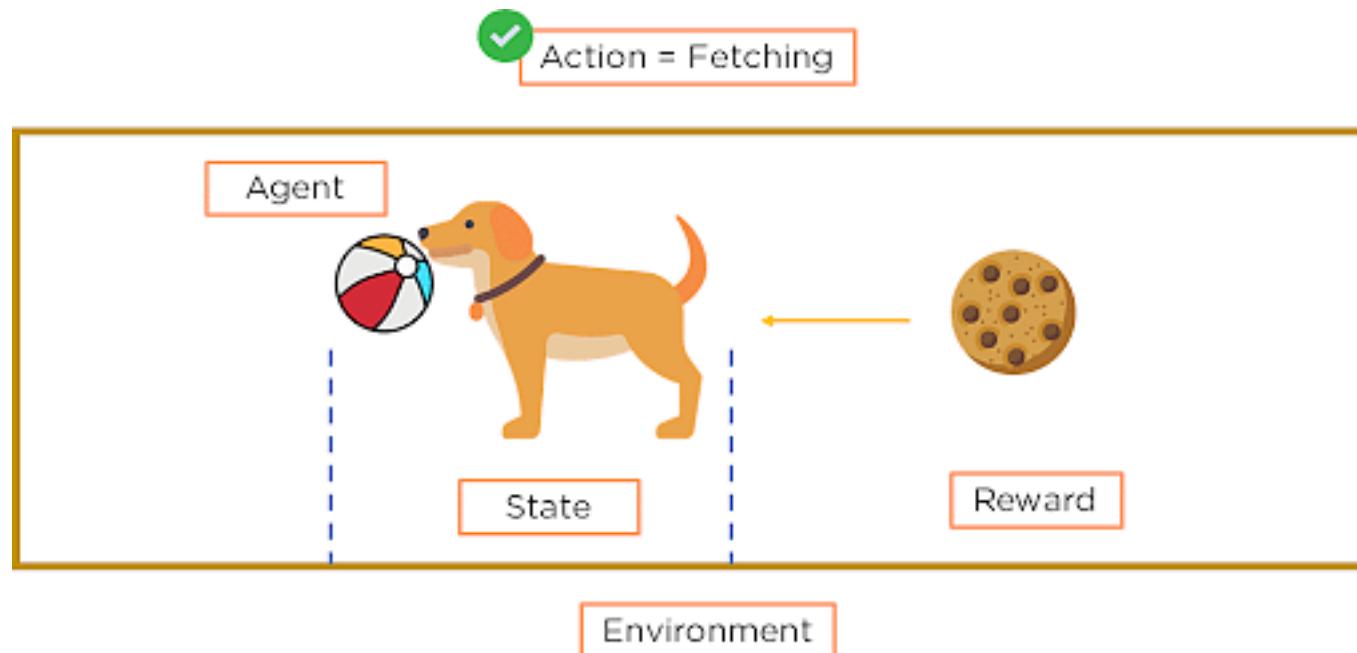


# Unsupervised Learning



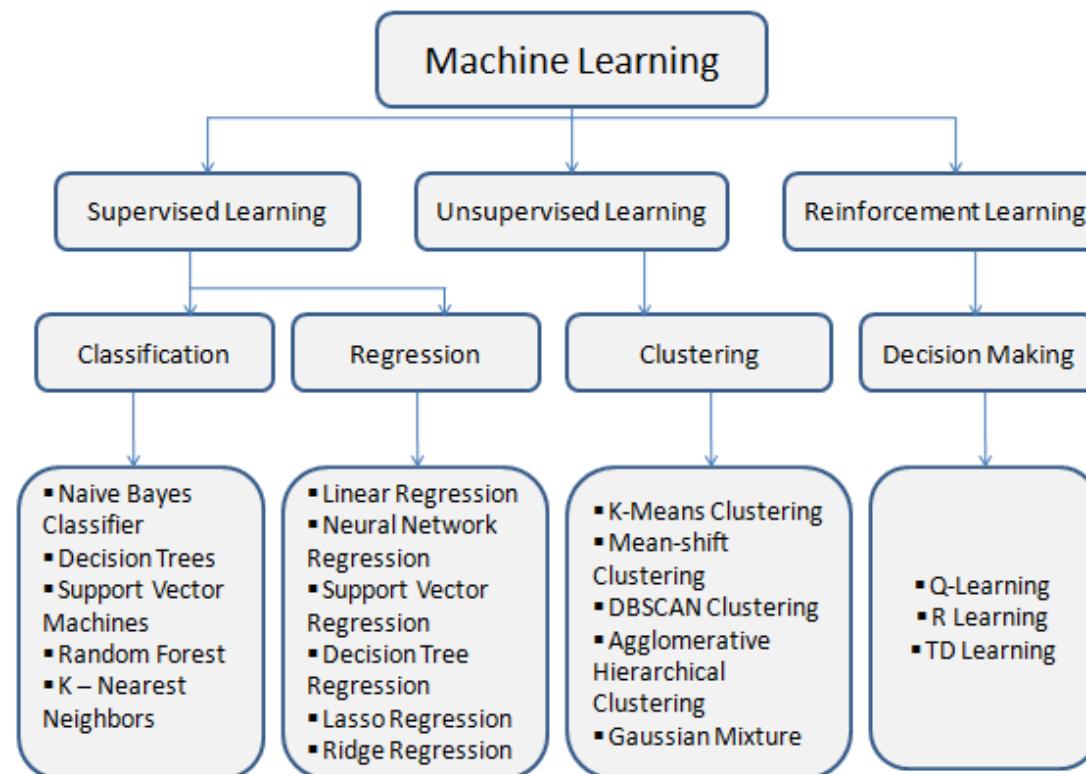
# Reinforcement Learning

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# Types of Machine Learning Algorithms

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**"COMPUTERS ARE  
ABLE TO SEE, HEAR  
AND LEARN. WELCOME  
TO THE FUTURE."  
-DAVE WATERS**