Types of Machine learning

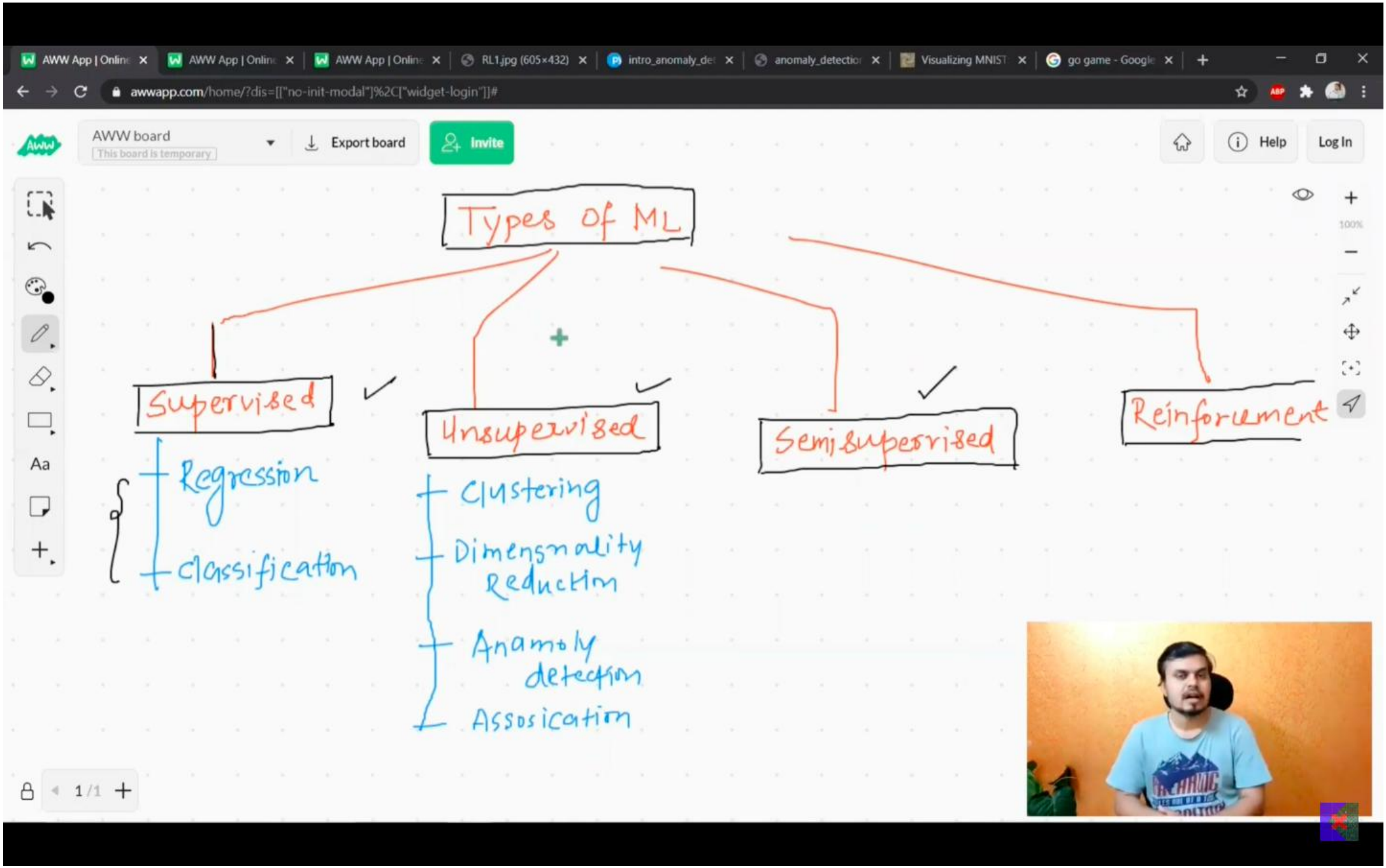
1)Based on amount of supervision

Supervised, Unsupervised, Semi-supervised, Reinforcement Learning

2)Based on How model gets trained on Production

Batch Machine Learning , Online Machine Learning

3) Based on Instance Based Vs Model based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github.com/online-ml/river

River

tests passing | docs up | roadmap up | release v0.1 | downloads resource not found | License BSD 3-Clause

In a nutshell

River is a Python library for online machine learning. It is the result of a merger between creme and scikit-multiflow.

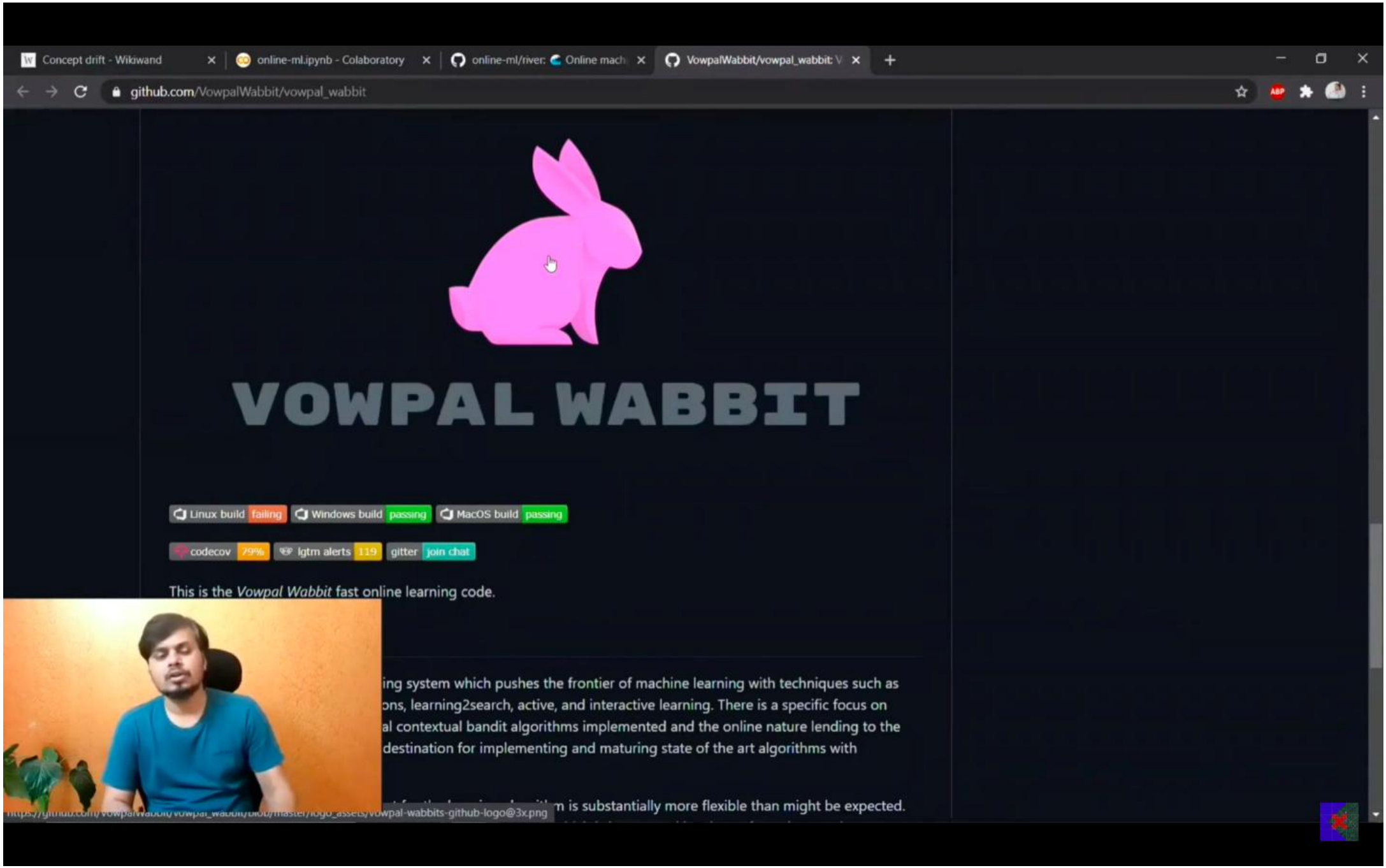
River's ambition is to be the go-to library for doing machine learning on streaming data.

Table of contents

ogistic regression to classify the website phishing dataset. Here's a look at the first observation in the dataset.

Languages

Python 99.1% Other 0.9%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VowpalWabbit/vowpal_wabbit: V
github.com/VowpalWabbit/vowpal_wabbit
VOWPAL WABBIT
Linux build failing
Windows build passing
MacOS build passing
codecov 79%
lgtm alerts 119
gitter join chat
This is the Vowpal Wabbit fast online learning code.
ing system which pushes the frontier of machine learning with techniques such as
ons, learning2search, active, and interactive learning. There is a specific focus on
al contextual bandit algorithms implemented and the online nature lending to the
destination for implementing and maturing state of the art algorithms with
m is substantially more flexible than might be expected.

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100 Days of ML

Day 4 - Batch ML
Day 5 - Online ML

1. Online Machine Learning
2. When to use?
3. How to implement?
4. Learning Rate
5. Out of Core Learning
6. Disadvantage
7. Batch Vs Online Learning

7. Batch Vs Online Learning

Thursday, March 18, 2021 4:29 PM

Offline Learning	Features	Online Learning
Less complex as model is constant	**Complexity**	Dynamic complexity as the model keeps evolving over time
Fewer computations, single time batch-based training	**Computational Power**	Continuous data ingestions result in consequent model refinement computations
Easier to implement	**Use in Production**	Difficult to implement and manage
Image Classification or anything related to Machine Learning - where data patterns remains constant without sudden concept drifts	**Applications**	Used in finance, economics, heath where new data patterns are constantly emerging
Industry proven tools. E.g. Sci-kit, TensorFlow, Pytorch, Keras, Spark Mlib	**Tools**	Active research/New project tools: E.g. MOA, SAMOA, scikit-multiflow, streamDM

iunera

Image courtesy - https://www.iunera.com/kraken/fabric/simple-introduction-to-online-learning-in-machine-learning/

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- Day 4 - Batch ML
- Day 5 - Online ML
- Day 6 - Instance...

1. Instance Vs Model Based L...
2. Instance Based
3. Model Based
4. Differences

2. Instance Based

Friday, March 19, 2021 4:06 PM

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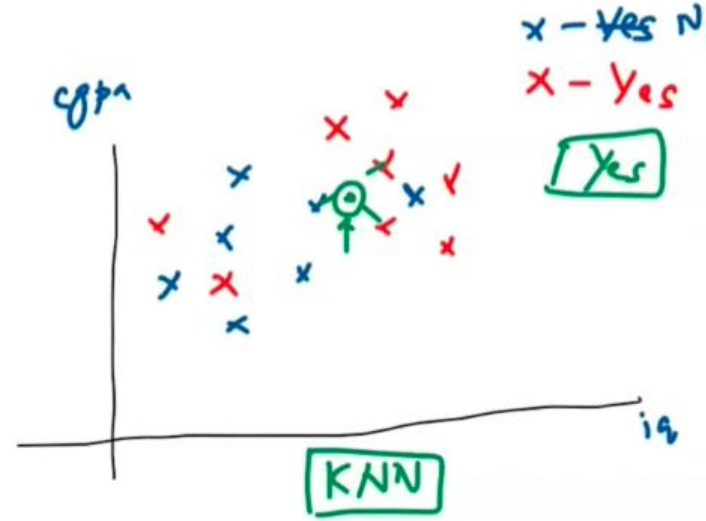
70	7	n

7.5, 103



x - ~~Yes~~ No

x - Yes

Yes

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- Day 6 - Instance...
  - 3. Model Based
  - 4. Differences

3. Model Based

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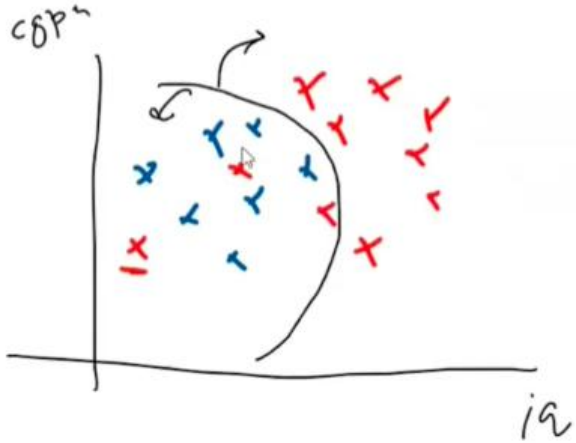

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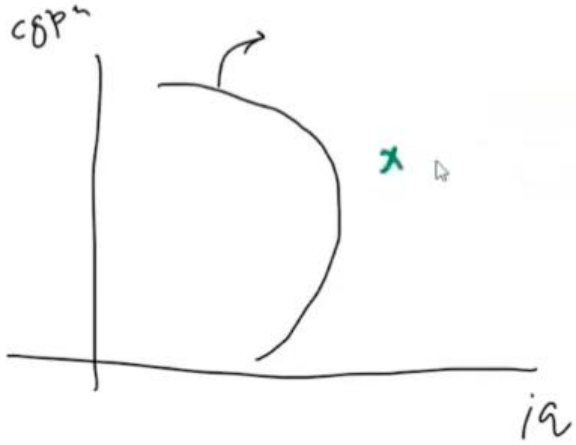

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2. Instance Based
3. Model Based
4. Differences

4. Differences

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Usual/Conventional Machine Learning	**Instance Based Learning**
Prepare the data for model training	Prepare the data for model training. No difference here
Train model from training data to estimate model parameters i.e. discover patterns	Do not train model. Pattern discovery postponed until scoring query received
Store the model in suitable form	There is no model to store
Generalize the rules in form of model, even before scoring instance is seen	No generalization before scoring. Only generalize for each scoring instance individually as and when seen
Predict for unseen scoring instance using model	Predict for unseen scoring instance using training data directly
Can throw away input/training data after model training	Input/training data must be kept since each query uses part or full set of training observations
Requires a known model form	May not have explicit model form
Storing models generally requires less storage	Storing training data generally requires more storage