

Model Maintenance

Why Do ML Models Degrade With Time?

Why Do ML Models Degrade With Time?

- Change of concept

Why Do ML Models Degrade With Time?

- Change of concept

Error1_occured	Error2_occured	Error3_occured	Error4_occured

Why Do ML Models Degrade With Time?

- **Change of concept**

Error0_occured	Error1_occured	Error2_occured	Error3_occured	Error4_occured

Why Do ML Models Degrade With Time?

- Change of concept

Fahrenheit

Why Do ML Models Degrade With Time?

- Change of concept

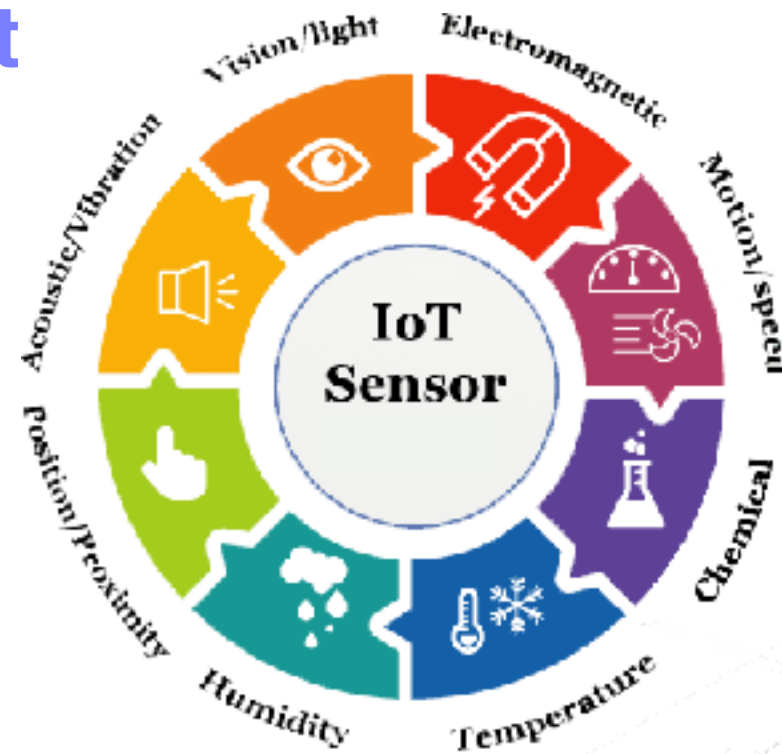
Celsius

Why Do ML Models Degrade With Time?

- **Change of concept**
- **Concept drift**

Why Do ML Models Degrade With Time?

- Change of concept
- Concept drift



Why Do ML Models Degrade With Time?

- Change of concept
- Concept drift

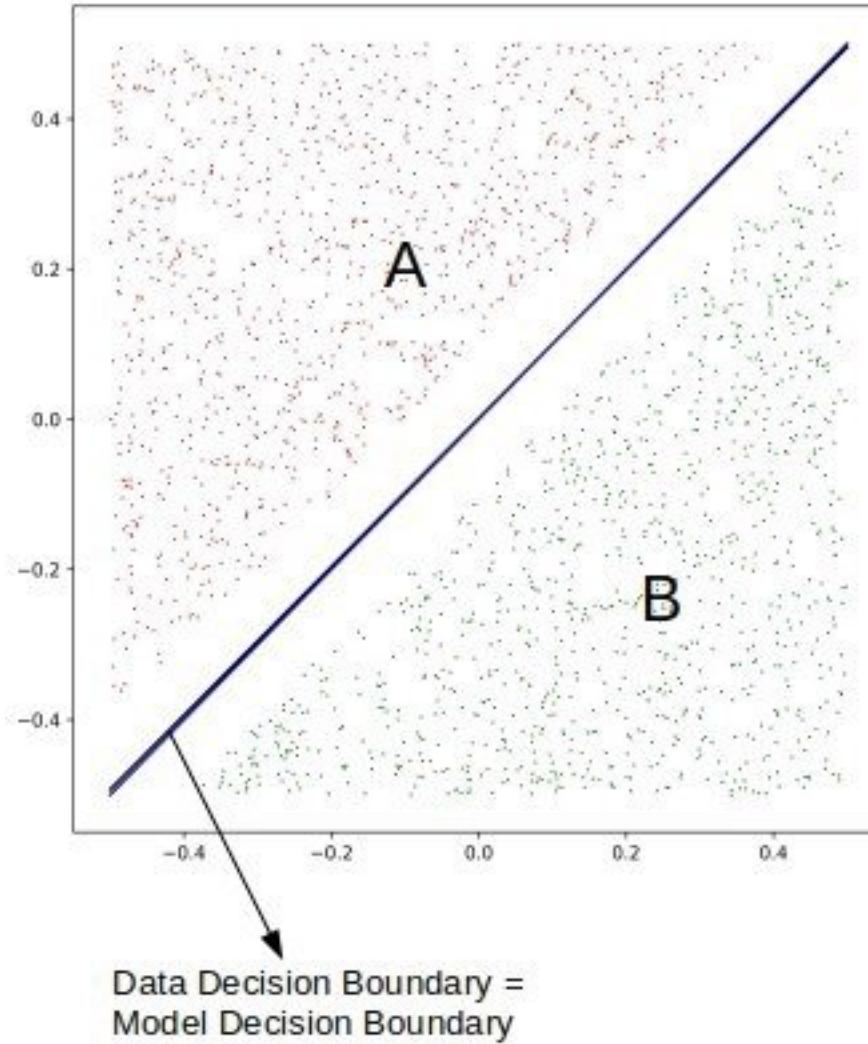
Uses Slack
1
1

Why Do ML Models Degrade With Time?

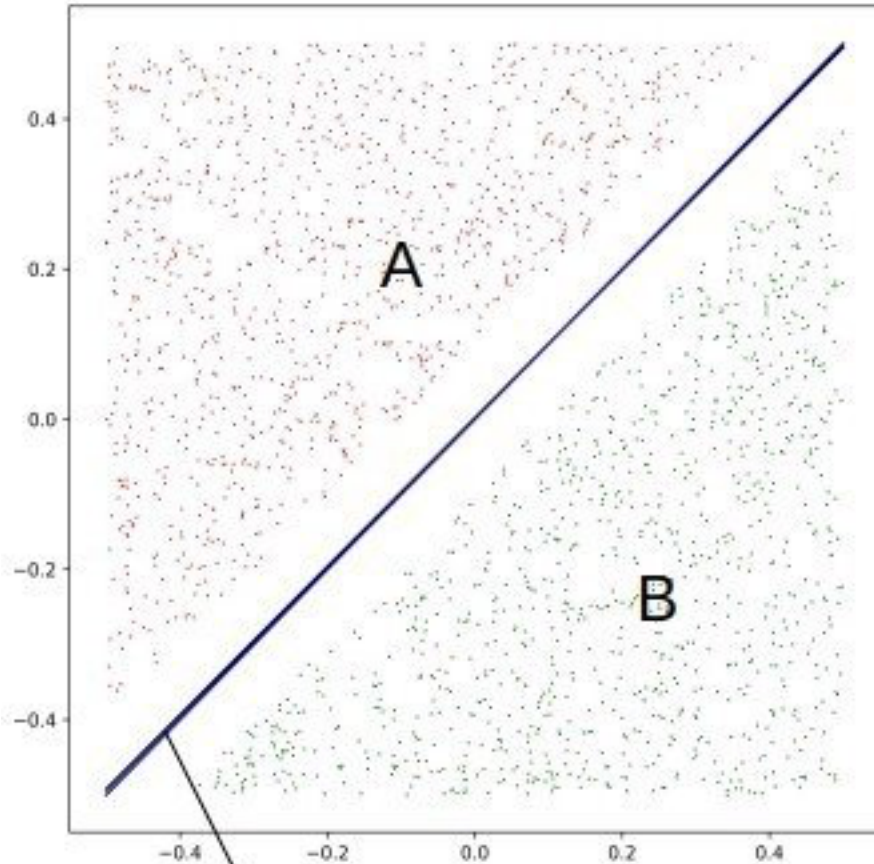
- Change of concept
- Concept drift

Uses Slack
1
1

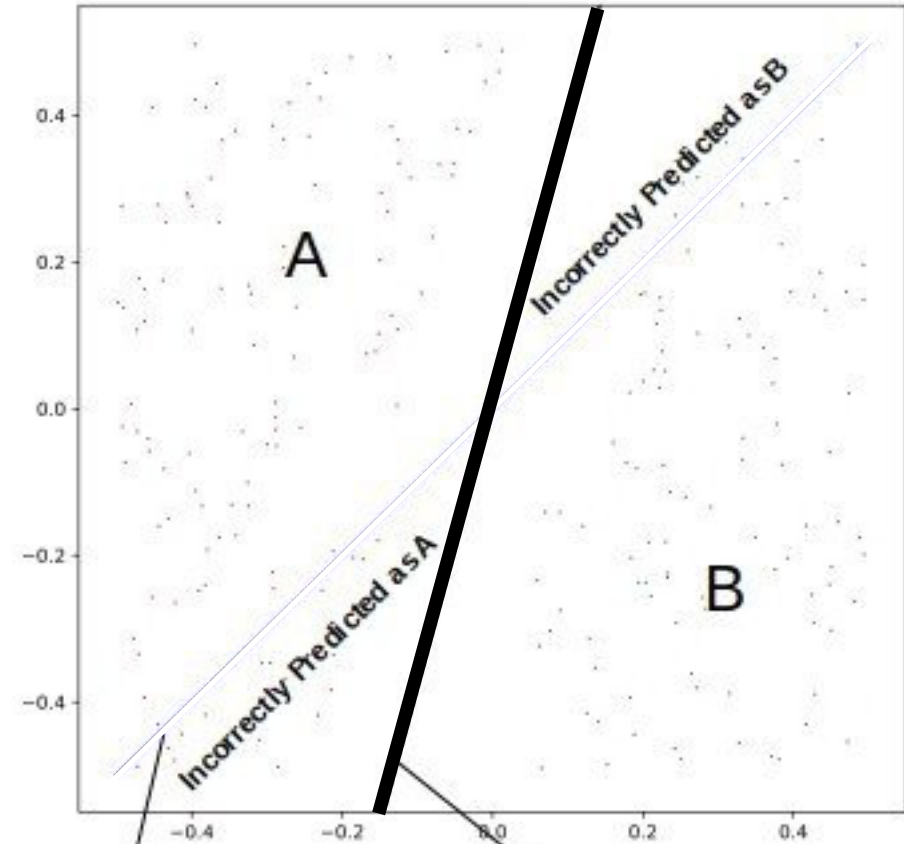
ML Model



Concept Drift



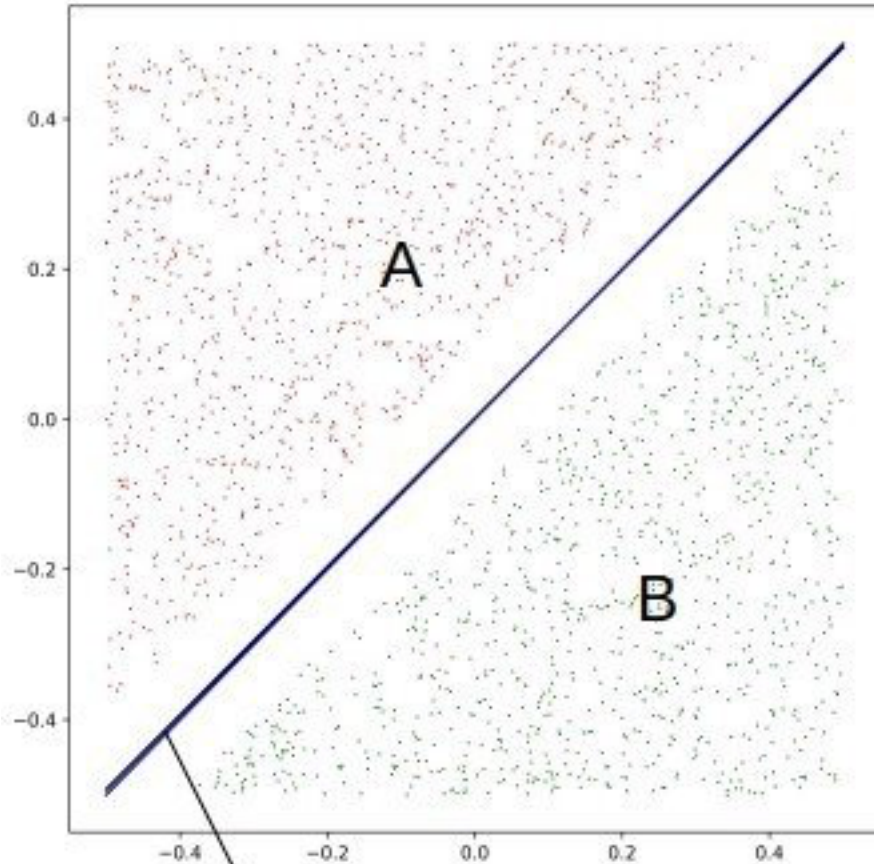
Data Decision Boundary =
Model Decision Boundary



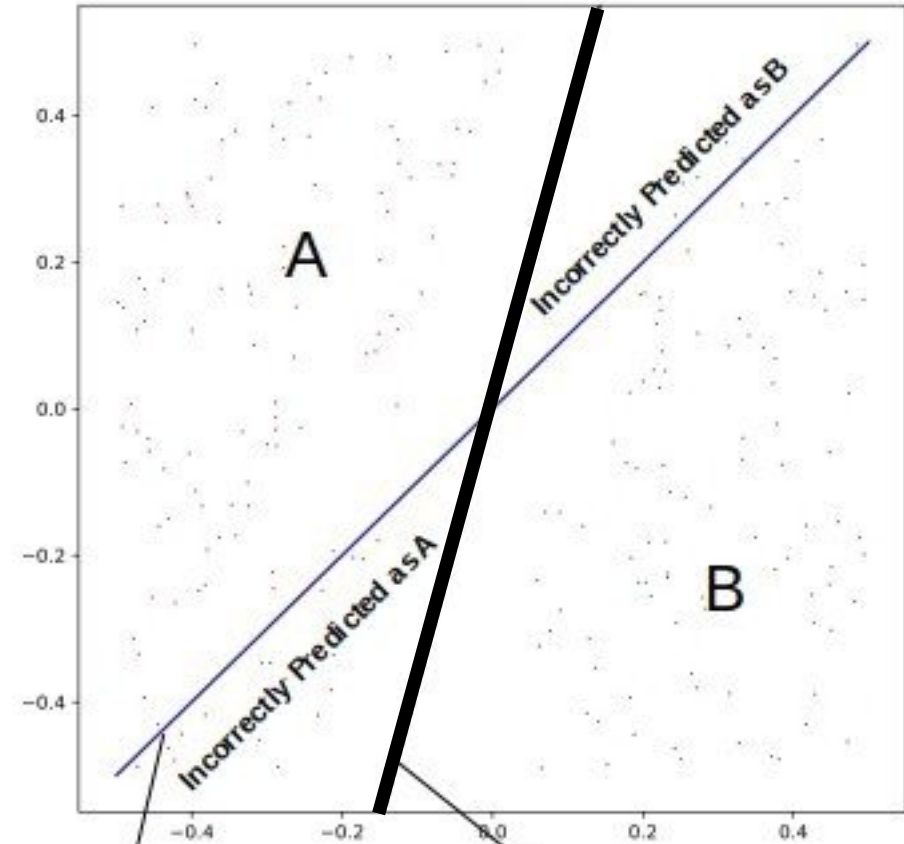
Model Decision Boundary

New Data Decision Boundary

Concept Drift



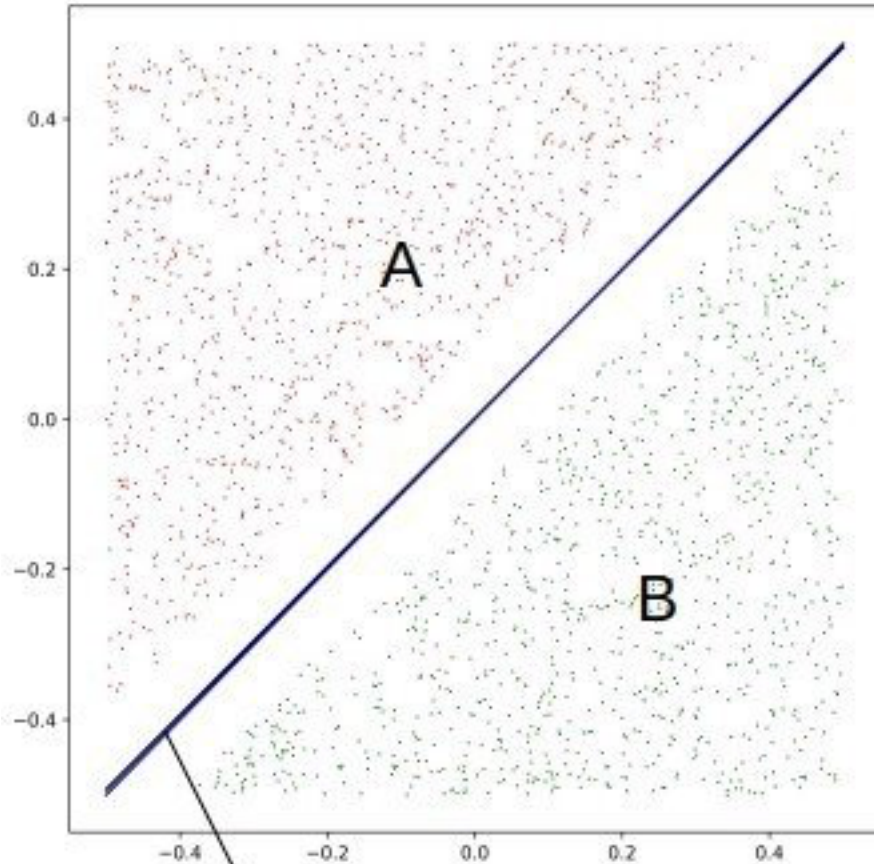
Data Decision Boundary =
Model Decision Boundary



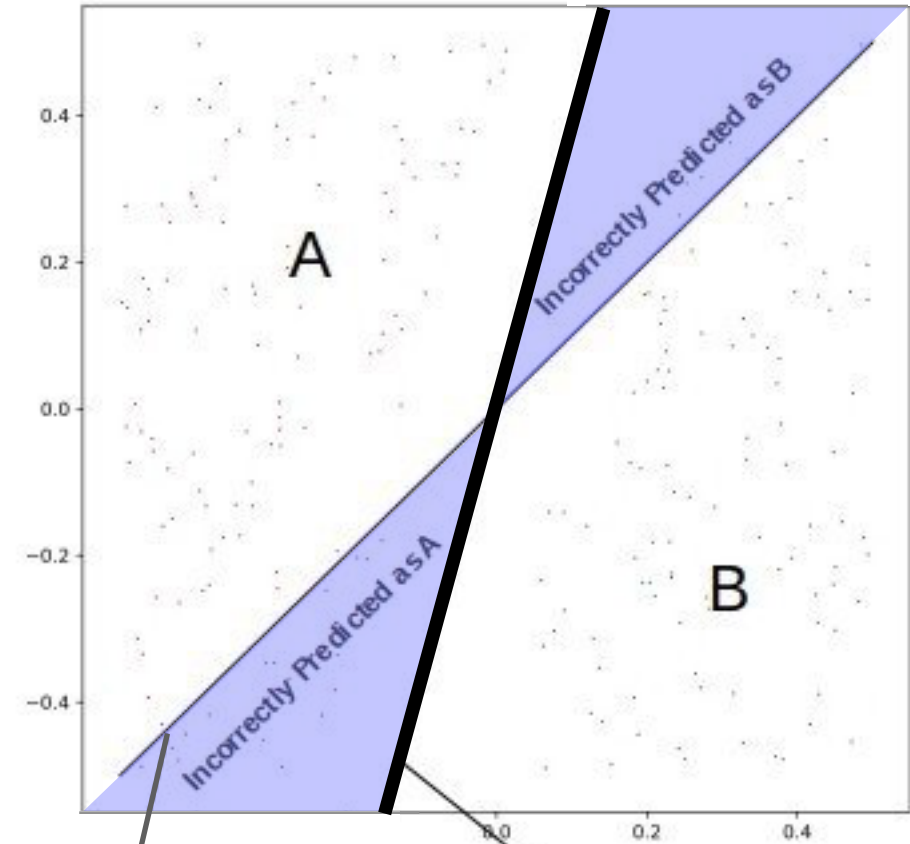
Model Decision Boundary

New Data Decision Boundary

Concept Drift



Data Decision Boundary =
Model Decision Boundary



Model Decision Boundary

New Data Decision Boundary

How to prevent model degradation?

How to prevent model degradation?

1. Train on new data

How to prevent model degradation?

1. Train on new data
2. Train on better features

How to prevent model degradation?

1. Train on new data
2. Train on better features
3. Train using better algorithms

Continuous Learning

Continuous Learning

1

Save new training data as you receive it.

2

Test its accuracy against your current ML model.

3

If you see your model degrading over time, use the new data to train and deploy a new model.

Continuous Learning

1

Save new training data as you receive it.

2

Test its accuracy against your current ML model.

3

If you see your model degrading over time, use the new data to train and deploy a new model.

Continuous Learning

1

Save new training data as you receive it.

2

Test its accuracy against your current ML model.

3

If you see your model degrading over time, use the new data to train and deploy a new model.

Continuous Learning

1

Save new training data as you receive it.

2

Test its accuracy against your current ML model.

3

If you see your model degrading over time, use the new data to train and deploy a new model.

Continuous Learning

1

Save new training data as you receive it.

2

Test its accuracy against your current ML model.

3

If you see your model degrading over time, use the new data to train and deploy a new model.