Modul : Supervised Learning

Prediction Measurement

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Prediction Measurement

Supervised Learning

"Correct Class"

Prediction based on Model/ Hypothesis from Learning

		Prediction	
		True	False
Reality	True	**Tp** True-positive	Fn False-negative
	False	Fp False-positive	**Tn** True-negative

Example

Instance	Correct Class	Prediction	
1	+	+	TP
2	-	-	TN
3	-	+	FP
4	+	-	FN
5	-	+	FP
6	+	-	FN
7	+	+	TP
8	-	-	TN
9	-	-	TN
10	+	+	TP

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Accuracy

		Prediction	
		True	False
Reality	True	**Tp** True-positive	Fn False-negative
	False	Fp False-positive	**Tn** True-negative

Fraction of all correct predictions over all predicted instances

$$Accuracy = \frac{Tp + Tn}{Tp + Fp + Tn + Fn}$$

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Precision

		Prediction	
		True	False
Reality	True	**Tp** **True-positive**	Fn False-negative
	False	Fp False-positive	**Tn** **True-negative**

Fraction of positive predictions that are correct

$$\Pr ecision = \frac{Tp}{Tp + Fp}$$

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Recall

		Prediction	
		True	False
Reality	True	**Tp** **True-positive**	Fn False-negative
	False	Fp False-positive	**Tn** **True-negative**

Fraction of positive instances that are correctly predicted (retrieved/caught)

$$\mathrm{Re}\,call = \frac{Tp}{Tp + Fn}$$

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Exercise: Find accuracy, precision and recall

Instance	Correct Class	Prediction
1	+	+
2	-	-
3	-	+
4	+	-
5	-	+
6	+	-
7	+	+
8	-	-
9	-	-
10	+	+
11	+	-
12	-	-
13	-	+
14	+	-

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THANK YOU