

## CHEAT SHEET

# Logistic Regression

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<b>Algorithm Name</b>	Logistic Regression
<b>Description</b>	Logistic regression is a probabilistic linear model. In essence, a logistic regression classifier produces the probability $P(y = 1 \mathbf{x})$ via the sigmoid function.
<b>Applicability</b>	Binary classification problems.
<b>Assumptions</b>	None.
<b>Underlying Mathematical Principles</b>	<ul style="list-style-type: none"><li>• Linear classification model</li><li>• Sigmoid function</li><li>• Convex loss function</li></ul>
<b>Additional Details</b>	<ul style="list-style-type: none"><li>• There is no closed form solution for logistic regression but since the loss function is convex, we can use Gradient Descent to find the optimal solution.</li></ul>
<b>Example</b>	Predict whether a candidate will win an election based on features such as campaign funds, poll results, if the candidate is currently in office or not, etc.

