

# Logistic Regression

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**A better response to life**

# Logistic Regression

- Similar to Linear regression, with a better response to change

# Logistic Regression for Classification

- Yes, the following procedure performs binary classification:
  - Normalize the logistic function (or sigmoid) predicted real-valued output  $\hat{y}$  between 0 and 1
  - Next, round  $\hat{y}$  to the nearest integer to classify the input as belonging either to class 0 or 1
- This can be modified for multiclass classification
  - More on this later

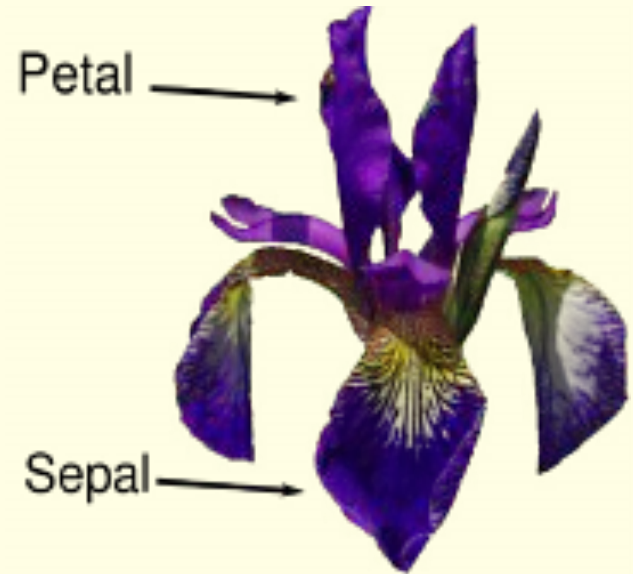
# Finally some Computer Vision Data

- The Iris flower dataset contains **measurements** of 150 flowers from three different species:
  - setosa
  - versicolor
  - virginica
- **Measurements (in cm):**
  - length and width of the petals
  - length and width of the sepals



# Summary of the Data

- No. of training examples(instances): 150
- No. of features (within X) : 4
  - sepal length
  - sepal width
  - petal length
  - petal width
- No. of classes : 3
  - Setosa
  - Versicolour
  - Virginica



# Visualize the Data

- Limit the plotting to the first two features
  - sepal length
  - sepal width
- Notice the good separation of classes in the figure

