

The data set (and description) can be downloaded here:

<http://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data>

#### Description:

1. Title: Iris Plants Database

Updated Sept 21 by C.Blake - Added discrepancy information

2. Sources:

(a) Creator: R.A. Fisher

(b) Donor: Michael Marshall (MARSHALL%PLU@io.arc.nasa.gov)

(c) Date: July, 1988

3. Past Usage:

- Publications: too many to mention!!! Here are a few.

1. Fisher, R.A. "The use of multiple measurements in taxonomic problems" Annual Eugenics, 7, Part II, 179-188 (1936); also in "Contributions to Mathematical Statistics" (John Wiley, NY, 1950).

2. Duda, R.O., & Hart, P.E. (1973) Pattern Classification and Scene Analysis. (Q327.D83) John Wiley & Sons. ISBN 0-471-22361-1. See page 218.

3. Dasarthy, B.V. (1980) "Nosing Around the Neighborhood: A New System Structure and Classification Rule for Recognition in Partially Exposed Environments". IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. PAMI-2, No. 1, 67-71.

-- Results:

-- very low misclassification rates (0% for the setosa class)

4. Gates, G.W. (1972) "The Reduced Nearest Neighbor Rule". IEEE Transactions on Information Theory, May 1972, 431-433.

-- Results:

-- very low misclassification rates again

5. See also: 1988 MLC Proceedings, 54-64. Cheeseman et al's AUTOCLASS II conceptual clustering system finds 3 classes in the data.

4. Relevant Information:

--- This is perhaps the best known database to be found in the pattern recognition literature. Fisher's paper is a classic in the field and is referenced frequently to this day. (See Duda & Hart, for example.) The data set contains 3 classes of 50 instances each, where each class refers to a type of iris plant. One class is linearly separable from the other 2; the latter are NOT linearly separable from each other.

--- Predicted attribute: class of iris plant.

--- This is an exceedingly simple domain.

--- This data differs from the data presented in Fishers article (identified by Steve Chadwick, [spchadwick@speedaz.net](mailto:spchadwick@speedaz.net) )

The 35th sample should be: 4.9,3.1,1.5,0.2,"Iris-setosa"  
where the error is in the fourth feature.

The 38th sample: 4.9,3.6,1.4,0.1,"Iris-setosa"

where the errors are in the second and third features.

5. Number of Instances: 150 (50 in each of three classes)

6. Number of Attributes: 4 numeric, predictive attributes and the class

## 7. Attribute Information:

1. sepal length in cm
2. sepal width in cm
3. petal length in cm
4. petal width in cm
5. class:
  - Iris Setosa
  - Iris Versicolour
  - Iris Virginica

## 8. Missing Attribute Values: None

### Summary Statistics:

	Min	Max	Mean	SD	Class	Correlation
sepal length:	4.3	7.9	5.84	0.83		0.7826
sepal width:	2.0	4.4	3.05	0.43		-0.4194
petal length:	1.0	6.9	3.76	1.76		0.9490 (high!)
petal width:	0.1	2.5	1.20	0.76		0.9565 (high!)

## 9. Class Distribution: 33.3% for each of 3 classes.

### Citation Request:

Please refer to the repository <http://archive.ics.uci.edu/ml> (see citation policy).

See also Frank, A. & Asuncion, A. (2010). UCI Machine Learning Repository [<http://archive.ics.uci.edu/ml>].

Irvine, CA: University of California, School of Information and Computer Science.

### Descriptive statistics:

Dataset= iris\_setosavsvirginica : n= 100 , d= 4

Class1: n= 50

### Covariance matrix:

	[,1]	[,2]	[,3]	[,4]
[1,]	0.1242	0.1003	0.0161	0.0105
[2,]	0.1003	0.1452	0.0117	0.0114
[3,]	0.0161	0.0117	0.0301	0.0057
[4,]	0.0105	0.0114	0.0057	0.0115

### Correlation matrix:

	[,1]	[,2]	[,3]	[,4]
[1,]	1.0000	0.7468	0.2639	0.2791
[2,]	0.7468	1.0000	0.1767	0.2800
[3,]	0.2639	0.1767	1.0000	0.3063
[4,]	0.2791	0.2800	0.3063	1.0000

Median:                    5            3.4            1.5            0.2

Mean:                      5.006 3.418    1.464    0.244

### MCD-estimated:

MDC-0.975-Mean:    4.975 3.3893 1.4429 0.2

MDC-0.750-Mean:    4.975 3.3893 1.4429 0.2

MDC-0.500-Mean:    4.975 3.3893 1.4429 0.2

