

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

<http://archive.ics.uci.edu/ml/machine-learning-databases/00225/>

Description:

ILPD (Indian Liver Patient Dataset) Data Set

Download: Data Folder, Data Set Description

Abstract: This data set contains 10 variables that are age, gender, total Bilirubin, direct Bilirubin, total proteins, albumin, A/G ratio, SGPT, SGOT and Alkphos.

Data Set Characteristics: Multivariate

Number of Instances: 583

Area: Life

Attribute Characteristics: Integer, Real

Number of Attributes: 10

Date Donated: 2012-05-21

Associated Tasks: Classification

Missing Values? N/A

Number of Web Hits: 9021

Source:

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Data Set Information:

This data set contains 416 liver patient records and 167 non liver patient records. The data set was collected from north east of Andhra Pradesh, India. Selector is a class label used to divide into groups (liver patient or not). This data set contains 441 male patient records and 142 female patient records.

Attribute Information:

1. Age Age of the patient
2. Gender Gender of the patient
3. TB Total Bilirubin
4. DB Direct Bilirubin
5. Alkphos Alkaline Phosphatase
6. Sgpt Alamine Aminotransferase
7. Sgot Aspartate Aminotransferase
8. TP Total Proteins
9. ALB Albumin
10. A/G Ratio Albumin and Globulin Ratio
11. selector field used to split the data into two sets (labeled by the experts)

Relevant Papers:

1. Bendi Venkata Ramana, Prof. M. S. Prasad Babu and Prof. N. B. Venkateswarlu, "A Critical Comparative Study of Liver Patients from USA and INDIA: An Exploratory Analysis", International Journal of Computer Science Issues, ISSN :1694-0784, May 2012.
2. Bendi Venkata Ramana, Prof. M. S. Prasad Babu and Prof. N. B. Venkateswarlu, "A Critical Study of Selected Classification Algorithms for Liver Disease Diagnosis", International Journal of Database Management Systems (IJDMS), Vol.3, No.2, ISSN : 0975-5705, PP 101-114, May 2011.

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= indian-liver-patient_1vs2 : n= 579 , d= 10

Class1: n= 414

Covariance matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]	[,8]	[,9]	[,10]
[1,]	246.1872	0.6203	-2.6722	-1.7320	376.8664	-436.8823	-243.4587	-3.1780	-3.4974	-1.3309
[2,]	0.6203	0.1719	0.2344	0.1186	-8.4775	7.0353	10.6412	-0.0520	-0.0365	-0.0007
[3,]	-2.6722	0.2344	51.2424	19.9290	318.8957	279.9389	509.4240	0.0609	-1.2365	-0.4557
[4,]	-1.7320	0.1186	19.9290	10.3204	164.7544	137.6200	247.9962	0.0671	-0.5629	-0.1916
[5,]	376.8664	-8.4775	318.8957	164.7544	72277.3631	5390.7891	13157.7419	-5.9795	-29.9191	-18.3495
[6,]	-436.8823	7.0353	279.9389	137.6200	5390.7891	45461.4642	56759.0071	-10.6641	-0.8769	1.9593
[7,]	-243.4587	10.6412	509.4240	247.9962	13157.7419	56759.0071	114336.1150	-7.4679	-18.6288	-5.9487
[8,]	-3.1780	-0.0520	0.0609	0.0671	-5.9795	-10.6641	-7.4679	1.2040	0.6577	0.0721
[9,]	-3.4974	-0.0365	-1.2365	-0.5629	-29.9191	-0.8769	-18.6288	0.6577	0.6200	0.1703
[10,]	-1.3309	-0.0007	-0.4557	-0.1916	-18.3495	1.9593	-5.9487	0.0721	0.1703	0.1064

Correlation matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]	[,8]	[,9]	[,10]
[1,]	1.0000	0.0954	-0.0238	-0.0344	0.0893	-0.1306	-0.0459	-0.1846	-0.2831	-0.2601
[2,]	0.0954	1.0000	0.0790	0.0890	-0.0761	0.0796	0.0759	-0.1142	-0.1118	-0.0055
[3,]	-0.0238	0.0790	1.0000	0.8666	0.1657	0.1834	0.2105	0.0078	-0.2194	-0.1952
[4,]	-0.0344	0.0890	0.8666	1.0000	0.1908	0.2009	0.2283	0.0190	-0.2225	-0.1829
[5,]	0.0893	-0.0761	0.1657	0.1908	1.0000	0.0940	0.1447	-0.0203	-0.1413	-0.2093
[6,]	-0.1306	0.0796	0.1834	0.2009	0.0940	1.0000	0.7873	-0.0456	-0.0052	0.0282
[7,]	-0.0459	0.0759	0.2105	0.2283	0.1447	0.7873	1.0000	-0.0201	-0.0700	-0.0539
[8,]	-0.1846	-0.1142	0.0078	0.0190	-0.0203	-0.0456	-0.0201	1.0000	0.7612	0.2013
[9,]	-0.2831	-0.1118	-0.2194	-0.2225	-0.1413	-0.0052	-0.0700	0.7612	1.0000	0.6631
[10,]	-0.2601	-0.0055	-0.1952	-0.1829	-0.2093	0.0282	-0.0539	0.2013	0.6631	1.0000

Median: 46.6575 1.8028 2.7957 1.2738 233.0326 46.1209 59.6008 6.5122 3.136 0.9329

Mean: 46.1449 1.7802 4.1804 1.9316 319.5362 99.9734 138.1739 6.4587 3.0585 0.9142

MCD-estimated:

MDC-0.975-Mean: 47.3773 2 1.5278 0.6189 247.1415 44.198 54.8586 6.4363 3.1174 0.9419

MDC-0.750-Mean: 47.4365 2 1.5502 0.631 247.4554 44.5445 55.1363 6.4371 3.1202 0.9434

MDC-0.500-Mean: 47.4365 2 1.5479 0.6286 248.7934 44.1924 54.911 6.4315 3.1113 0.9398

Class2: n= 165

Covariance matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]	[,8]	[,9]	[,10]
[1,]	291.0133	-0.4584	0.2049	0.1733	-190.6957	-46.7999	-61.6452	-3.2687	-2.2266	-0.2056
[2,]	-0.4584	0.2101	0.0695	0.0379	5.0583	1.1157	2.5635	-0.0205	-0.0071	0.0066
[3,]	0.2049	0.0695	1.0193	0.5198	80.9240	8.5153	14.2241	-0.1654	-0.1453	-0.0473
[4,]	0.1733	0.0379	0.5198	0.2724	41.6836	4.3909	7.3869	-0.0794	-0.0733	-0.0248
[5,]	-190.6957	5.0583	80.9240	41.6836	20030.1196	1341.8262	1384.5409	-4.3997	-16.1198	-9.8257
[6,]	-46.7999	1.1157	8.5153	4.3909	1341.8262	632.3328	610.3452	0.9815	0.8766	0.0663
[7,]	-61.6452	2.5635	14.2241	7.3869	1384.5409	610.3452	1336.8645	-4.0711	-2.3126	0.2008
[8,]	-3.2687	-0.0205	-0.1654	-0.0794	-4.3997	0.9815	-4.0711	1.1095	0.7056	0.0988
[9,]	-2.2266	-0.0071	-0.1453	-0.0733	-16.1198	0.8766	-2.3126	0.7056	0.6062	0.1650
[10,]	-0.2056	0.0066	-0.0473	-0.0248	-9.8257	0.0663	0.2008	0.0988	0.1650	0.0825

Correlation matrix:

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]	[,8]	[,9]	[,10]
[1,]	1.0000	-0.0586	0.0119	0.0195	-0.0790	-0.1091	-0.0988	-0.1819	-0.1676	-0.0420
[2,]	-0.0586	1.0000	0.1502	0.1586	0.0780	0.0968	0.1530	-0.0426	-0.0200	0.0504
[3,]	0.0119	0.1502	1.0000	0.9864	0.5663	0.3354	0.3853	-0.1556	-0.1848	-0.1631
[4,]	0.0195	0.1586	0.9864	1.0000	0.5643	0.3345	0.3871	-0.1445	-0.1803	-0.1656
[5,]	-0.0790	0.0780	0.5663	0.5643	1.0000	0.3770	0.2676	-0.0295	-0.1463	-0.2417
[6,]	-0.1091	0.0968	0.3354	0.3345	0.3770	1.0000	0.6638	0.0371	0.0448	0.0092
[7,]	-0.0988	0.1530	0.3853	0.3871	0.2676	0.6638	1.0000	-0.1057	-0.0812	0.0191
[8,]	-0.1819	-0.0426	-0.1556	-0.1445	-0.0295	0.0371	-0.1057	1.0000	0.8604	0.3265
[9,]	-0.1676	-0.0200	-0.1848	-0.1803	-0.1463	0.0448	-0.0812	0.8604	1.0000	0.7376
[10,]	-0.0420	0.0504	-0.1631	-0.1656	-0.2417	0.0092	0.0191	0.3265	0.7376	1.0000

Median: 42.9088 1.6847 0.9593 0.2991 187.7775 28.9654 31.8993 6.6418 3.4259 1.0516

Mean: 41.3636 1.703 1.1448 0.3964 220.6848 33.8364 40.7636 6.5394 3.3394 1.0296

MCD-estimated:

MDC-0.975-Mean: 41.3259 2.0001 0.9225 0.2888 197.4046 30.0561 33.0337 6.5978 3.4101 1.0492

MDC-0.750-Mean: 41.3 2.0001 0.93 0.2945 197.7667 30.6999 33.4889 6.6133 3.4167 1.0487

MDC-0.500-Mean: 41.3259 2.0001 0.9225 0.2888 197.4046 30.0561 33.0337 6.5978 3.4101 1.0492

Measures:

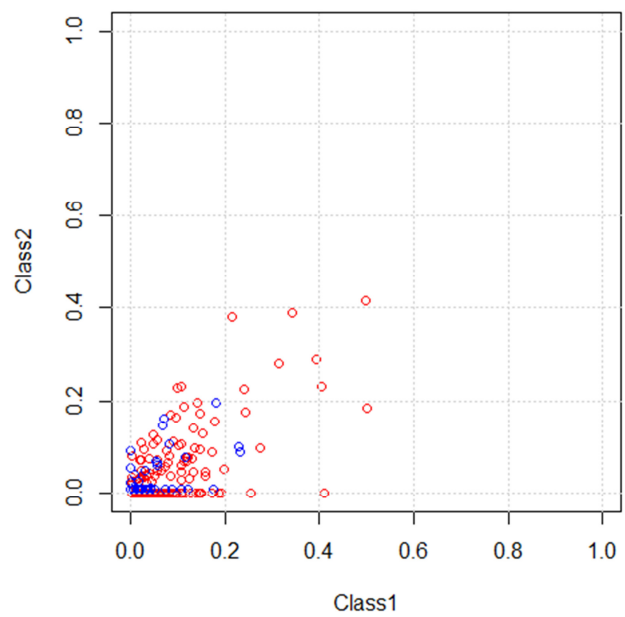
Mah.Dist: 0.8122

Mah.Dist-MCD-0.975: 0.8385

Mah.Dist-MCD-0.750: 0.8264

Mah.Dist-MCD-0.500: 0.8264

DD-Plot (zonoid): indian-liver-patient_MvsF



DD-Plot (random Tukey): indian-liver-patient_MvsF

