Data Mining with WEKA (Data Preprocessing)

WEKA: the software

- WEKA: Data Mining Software in Java
- The Explorer
 - Data Preprocessing
 - Classification and Regression
 - Clustering
 - Association Rules
 - Attribute Selection
 - Data Visualization
- The Experimenter
- The Knowledge Flow GUI



WEKA only deals with	n "flat" files
 @relation heart-disease-simplified @attribute age numeric @attribute sex { female, male} @attribute chest_pain_type { typ_angina, asympt @attribute cholesterol numeric 	, non_anginal, atyp_angina}
<pre>@attribute cholesteror numeric @attribute exercise_induced_angina { no, yes} @attribute class { present, not_present} @data 63,male,typ_angina,233,no,not_present</pre>	
67,male,asympt,286,yes,present 67,male,asympt,229,yes,present 38,female,non_anginal,?,no,not_present 	Flat file in ARFF format (Attribute-Relation File Format)







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2 1 5620	0.7742 0	210	0.21	-0.20	-0.02	dig		
2 -1.0008	0.001 /	0.20	0.00	0.00	-0.01	dia		
4 -0.25	9.326 -(0.46	0.02	-0.15	-0.04	dig		
5 -0.99	9 7547 -0	0.07 -	-0.04	-0.12	-0.01	dig		
6 -0.79	9.2501 0	.966	-0.01	-0.23	-0.02	dig		
7 -0.68	9,9062 0	.446	-0.07	-0.12	-0.04	diq		
8 -1.1166	9.5979 2	.0587 -	-0.03	-0.18	-0.04	dig		
9 -1.142	9.1089_3	3.3002	0.11	-0.23	-0.05	dig		
10 -0.98	8.7044 0.	81354 -	-0.01	-0.21	0.07	dig		
11 -0.06	9.9049 -0	0.59	0.05	-0.18	-0.02	dig		
12 -0.71	7.8447 0	.561	0.01	-0.05	-0.00	dig		
13 -1.0657	9.7005 0	0.6322 -	-0.02	-0.20	-0.00	dig		
14 -1.0204	9.2253 0	.474	-0.04	-0.10	-0.03	dig		
15 -1.7295	9.469 0	0.6239	0.02	-0.17	0.00	dig		
16 -1.0025	10.149 0.	.443	0.02	-0.29	-0.00	dig		
1/ -0.8/	9.1591 1	.7763 -	-0.08	-0.09	-0.01	dig		
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19 -1.7802	9.6754 1	9388	0.08	-0.15	-0.02	dig		
20 -1.9128	9.0001 1	6627	0.02	-0.11	0.03	aig		
21 -0.04	9.0334 0	001	0.03	0.1024	0.03	haul		
22 -0.00	10.077 0	614	0.00	0.1224	0.02	haul		
24 -0.3968	9 4517 0	296 -	-0.00	0 1981	-0.00	haul		
25 -0.58	9,7239 0	711	0.02	0.16	0.00	haul		
26 -1.1984	9.379 0	.198	-0.02	0.23	-0.00	haul		
27 -0.91	9.4198 1	.3454 -	-0.05	0.26	0.01	haul		
28 -0.91	9.4781 1	.1263 -	-0.00	0.24	-0.00	haul		
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54	-0.74	8,7592	0.399	-0.00	-0.13	0.02	dump		
55	-0.45	10.083	-0.07	-0.03	-0.19	-7.82	dump		
56	-0.41	9.7763	-0.10	0.05	-0.17	-0.01	dump		
57	-0.75	9.2956	0.4483	0.08	-0.21	-0.01	dump		
58	-0.05	9.3262	-0.47	0.05	-0.18	0.00	dump		
59	-1.1038	8.9577	-0.12	0.08	-0.18	-0.03	dump		
60	-0.41	10.058	0.514	0.05	-0.25	0.01	dump		
61	-2.369	8.797	0.014	-0.10	-0.17	-0.01	swing		
62	-0.35	7.0201	0.103	0.1624	-0.13	-0.09	swing		
63	-1.9148	8.876	0.314	0.33	-0.38	-0.05	swing		
64	-1.3319	9.9153	-0.45	-0.05	-0.20	0.08	swing		
65	-1.4946	8.4338	-0.52	-0.02	-0.07	-0.00	swing		
66	-1.6116	8.1218	0.702	0.05	-0.32	0.05	swing		
67	-1.44/1	9.9445	-1.6379	-0.17	-0.41	0.10	swing		
68	-0.36	8.5356	-1.5/38	-0.03	0.25	-0.09	swing		
69	-2.0049	10.772	1.3/03	0.00	0.00	-0.14	swing		
74	-1.3007	9.2393	2.0400	0.04	-0.47	0.07	swing		-
72	-2.0007	9.1403	1.0004	0.04	-0.20	-0.10	swing		
72	-5.5500	10 500	0.0250	0.09	-0.32	0.11	Swing		
74	-0.9675	8 0562	2 0158	-0.21	-0.42	0.06	swing		
75	-0.28	7 8596	0 749	0.12	-0.33	-0.02	swing		
76	-0.78	10 453	-0.22	0 2809	-0.27	-0.09	swing		
77	-1.8906	12 082	1 3077	-0.18	-0.43	0.09	swing		
78	0.072	12,299	1.3175	-0.28	-0.27	0.05	swing		
79	-3.2188	8,4702	3.3176	-0.11	-0.22	-0.03	swina		
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81	0.0	0.0	0.0	0.0	0.0	0.0	dig		V
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Relation: motion_80 Attributes: 7 Instances: 80 Sum of weights: 80	Name: gyr_z Missing: 0 (0%) Distinct: 80	Type: Numeric Unique: 80 (100%)
Attributes	Statistic	Value
All None Invert Pattern	Minimum Maximum Mean	-0.163 0.127 -0.009
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Relation: motion_80 Instances: 80	attributeIndices	first-last	Type: Numeric 30 Unique: 80 (100%)
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urrent relation				
Relation: motion_80 Instances: 80	attributeIndices	first-last	30	Type: Numeric Unique: 80 (100%)
ttributes	binRangePrecision	6	-0.163	
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Relation: motion_80 Attributes: 7 Instances: 80 Sum of weights: 80	Name: gyr_z Missing: 0 (0%)	T Distinct: 80 Un	ype: Numeric ique: 80 (100%)
Attributes	Statistic	Value	
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Current relation	Selected attribute	
Relation: motion_80-weka.filters.unsupervised.attribute.Discreti Attributes: 7 Instances: 80 Sum of weights: 80	Name: acc_x Missing: 0 (0%) Distinct: 10	Type: Nominal Unique: 0 (0%)
Attributes All None Invert Pattern No. Name 1 acc.y accc.y accc.y accc.y<	No. Label Count 1 (1-1334)" 8 2 (1-1334)" 8 3 (1-147065-108475)" 8 4 (1-108475-0964025)" 8 5 (1-09470-079405-079405 8 6 6 (1-079405-0686455) 8 8 7 (1-08475-049455 8 7 9 (1-04953-0709405 8) 9 9 (1-04953-02367)" 8 9 (1-03637-0009472)" 8 10 (1-00637-0009472)" 8 10 (1-00637-0009472)" 8	Weight 80 80
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Preprocess Classify Cluster Associate	weka.gui.GenericObjectEditor	3	×	
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Relation: motion_80 Instances: 80	attributeIndices	8	30	Type: Numeric Unique: 80 (100%)
Attributes	binRangePrecision	6		Value
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59yry 6gyrz 7class	findNumBins	False		Visualize
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Attributes	binRangePrecision	6		Value
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Current relation	Selected attribute
Relation: motion_80 Attributes: 7 Instances: 80 Sum of weights: 80	Name: acc_z Type: Numeric Missing: 0 (0%) Distinct: 80 Unique: 80 (100%)
Attributes	Statistic Value
All None Invert Pattern No. Name I acc_x 2 acc_y 3 acc_y acc_y Image: Acc y Image: Acc	Minimum -1.638 Maximum 3.318 Mean 0.43 StdDev 0.954
4 gyr_x 5 gyr_y 6 gyr_y 7 class	Class class (Nom) Visualize A
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Preprocess Classify Cluster Associate Select attributes Visualize		
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Current relation	Selected attribute	
Relation: motion_80-weka filters.unsupervised attribute.Discreti Attributes: 7 Instances: 80 Sum of weights: 80	Name: acc_z Missing: 0 (0%) Distinct: 10	Type: Nominal Unique: 0 (0%)
Attributes	No. Label Count	Weight
All None Invert Pattern No. Name 1 2 2 2 2 2 3	2 (*0.5786-0.315116) 8 3 (*0.315115-0.114865 8 4 (*0.114685.0.656987) 8 5 (*0.056987.0.42151) 8 6 (*0.42151-0.42151) 8 7 (*0.42151-0.42151) 8 8 (*0.73018-1.006) 8 9 (*1.006-1.57335) 8 40. *4.67332.ieV	80 80 80 80 80 80 80 80 80 80 80 80 80 8
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