

Multi-Objective Feature Selection in Music Genre and Style Recognition Tasks

[Supplementary Material: Tables for $N(\mathcal{X}, \mathcal{Y})$, in percent
(\mathcal{X} : classifiers in rows; \mathcal{Y} : classifiers in columns)]

Igor Vatolkin
TU Dortmund
Faculty of Computer Science
Chair of Algorithm Engineering
igor.vatolkin@tu-dortmund.de

Mike Preuß
TU Dortmund
Faculty of Computer Science
Chair of Algorithm Engineering
mike.preuss@tu-dortmund.de

Günter Rudolph
TU Dortmund
Faculty of Computer Science
Chair of Algorithm Engineering
guenter.rudolph@tu-dortmund.de

**Table 1: Classical
Recall vs. Specificity**

	C4.5	RF	NB	SVM
C4.5	x	12.72	4.96	20.96
RF	6.33	x	2.04	14.51
NB	22.43	19.49	x	32.93
SVM	6.5	11.8	1.76	x
Accuracy vs. Feature Rate				
	C4.5	RF	NB	SVM
C4.5	x	14.43	21.02	22.86
RF	9.07	x	18.17	19.68
NB	4.52	5.2	x	15.74
SVM	5.88	8.42	12.63	x

Table 2: Pop

Recall vs. Specificity				
	C4.5	RF	NB	SVM
C4.5	x	25.24	15.75	27.5
RF	0.06	x	2	1.24
NB	0.22	2.67	x	4.41
SVM	0.72	7.28	3.27	x
Accuracy vs. Feature Rate				
	C4.5	RF	NB	SVM
C4.5	x	26.91	49.44	46.84
RF	1.10	x	19.06	14.4
NB	0.18	0.44	x	5.8
SVM	0.02	0.65	17.92	x

Table 3: Rap

Recall vs. Specificity				
	C4.5	RF	NB	SVM
C4.5	x	31.14	14.21	29.08
RF	0.76	x	5.46	12.49
NB	0.77	3.88	x	13.32
SVM	0.03	2.64	1.85	x
Accuracy vs. Feature Rate				
	C4.5	RF	NB	SVM
C4.5	x	14.67	26.41	13.81
RF	9.08	x	27.74	13.50
NB	0.57	0.68	x	5.15
SVM	6.22	3.77	14.18	x

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

GECCO'11, July 12–16, 2011, Dublin, Ireland.

Copyright 2011 ACM 978-1-4503-0557-0/11/07 ...\$10.00.

Table 4: Heavy Metal

Recall vs. Specificity				
	C4.5	RF	NB	SVM
C4.5	x	31.22	75.33	20.27
RF	1.07	x	8.95	0
NB	0	0.03	x	0.02
SVM	5.68	3.00	63.47	x
Accuracy vs. Feature Rate				
	C4.5	RF	NB	SVM
C4.5	x	19.61	55.3	49.71
RF	7.41	x	38.5	33.33
NB	0	0.01	x	8.15
SVM	0.12	29.47	0.45	x

Table 5: Electronic

Recall vs. Specificity				
	C4.5	RF	NB	SVM
C4.5	x	22.33	19.3	65.76
RF	0.16	x	6.48	21.06
NB	0.08	2.84	x	16.28
SVM	0	0.03	0.12	x
Accuracy vs. Feature Rate				
	C4.5	RF	NB	SVM
C4.5	x	16.96	46.23	32.97
RF	7.77	x	35.02	19.76
NB	0.08	0.14	x	5.67
SVM	0.47	11.05	0.35	x

Table 6: R & B

Recall vs. Specificity				
	C4.5	RF	NB	SVM
C4.5	x	4.53	12.02	2.62
RF	4.33	x	5.68	0.81
NB	2.78	7.99	x	1.8
SVM	14.42	10.09	17.48	x
Accuracy vs. Feature Rate				
	C4.5	RF	NB	SVM
C4.5	x	13.42	79.22	50.86
RF	4.32	x	49.0	31.88
NB	0	0.05	x	0.28
SVM	1.5	3.05	53.48	x