

kNNR	Best	LR	LRX	SWR	SWRX	SWRSC	SWRSCX
automobile	24.00(3)	26.18(7)	22.32 (1)	25.12(4)	25.19(5)	26.03(6)	22.85(2)
fertility	98.29(3)	102.88(4)	117.05(7)	97.87(2)	104.65(6)	97.70 (1)	104.19(5)
flow	87.64(5)	90.45(6)	64.75(2)	87.28(4)	67.93(3)	94.66(7)	59.72 (1)
forest	103.34(7)	99.63(3)	101.05(6)	100.69(5)	98.39 (1)	99.33(2)	99.70(4)
servo	48.98(7)	44.49(4)	40.00 (1)	45.63(5)	46.86(6)	43.95(2)	44.21(3)
slump	95.02(4)	104.81(7)	98.99(5)	94.74(3)	92.13(2)	100.93(6)	89.88 (1)
traffic	34.54(5)	33.30 (1)	41.86(7)	34.30(4)	34.28(3)	34.11(2)	34.97(6)
wine_red	84.85(7)	82.87(4)	64.18 (1)	84.70(6)	79.17(3)	83.13(5)	66.28(2)
wine_white	86.12(7)	81.34(3)	66.83 (1)	86.00(6)	85.10(5)	81.62(4)	67.08(2)
Avg. Rank	(5.33)	(4.33)	(3.44)	(4.33)	(3.78)	(3.89)	(2.89)
Ridge	Best	LR	LRX	SWR	SWRX	SWRSC	SWRSCX
automobile	19.79(3)	88.54(6)	154.36(7)	19.86(4)	19.91(5)	18.80 (1)	19.40(2)
fertility	102.37(2)	2.46E+13(7)	1.06E+04(6)	102.93(3)	106.90(4)	97.77 (1)	106.99(5)
flow	65.66(5)	2.00E+08(7)	1.32E+07(6)	65.25(3)	65.31(4)	64.64(2)	63.24 (1)
forest	99.01(4)	9.54E+10(7)	4.14E+07(6)	97.88 (1)	98.13(2)	98.26(3)	99.69(5)
servo	62.34 (1)	4.52E+09(6)	8.55E+09(7)	62.68(3)	62.40(2)	63.39(5)	63.08(4)
slump	86.55(5)	5.19E+08(7)	6.30E+07(6)	85.69(4)	84.37(2)	85.69(3)	78.64 (1)
traffic	39.81(3)	7.17E+12(7)	1.02E+08(6)	40.19(5)	39.96(4)	37.21(2)	36.40 (1)
wine_red	64.85(3)	3.17E+04(7)	1.52E+04(6)	64.85(2)	64.81 (1)	64.89(4)	64.94(5)
wine_white	72.96(2)	1.84E+05(7)	1.60E+05(6)	72.96(3)	72.96(4)	72.96(5)	72.89 (1)
Avg. Rank	(3.11)	(6.78)	(6.22)	(3.11)	(3.11)	(2.89)	(2.78)
Lasso	Best	LR	LRX	SWR	SWRX	SWRSC	SWRSCX
automobile	18.55(4)	8.68E+05(7)	1.43E+05(6)	18.40(2)	18.40(3)	18.29 (1)	19.42(5)
fertility	92.95(1)	93.20(4)	118.85(7)	93.09(3)	97.43(5)	93.04(2)	103.44(6)
flow	65.12(5)	87.70(6)	292.57(7)	64.77(4)	64.62(3)	64.18(2)	62.61 (1)
forest	99.50(4)	124.95(7)	103.11(6)	98.06 (1)	98.11(2)	98.25(3)	99.65(5)
servo	64.85(5)	67.55(7)	64.17(4)	63.98(3)	63.87(2)	63.67 (1)	65.35(6)
slump	85.84(5)	1.44E+04(6)	1.57E+04(7)	85.26(3)	83.99(2)	85.55(4)	80.71 (1)
traffic	33.98 (1)	36.27(5)	43.16(6)	34.38(2)	34.53(3)	34.68(4)	49.65(7)
wine_red	74.83(6)	75.33(7)	65.06 (1)	74.81(5)	74.00(3)	74.53(4)	65.75(2)
wine_white	78.77(6)	78.50(4)	72.74 (1)	78.77(7)	77.65(3)	78.54(5)	74.22(2)
Avg. Rank	(4.11)	(5.89)	(5.00)	(3.33)	(2.89)	(2.89)	(3.89)
SVR	Best	LR	LRX	SWR	SWRX	SWRSC	SWRSCX
automobile	19.78(5)	6.15E+12(6)	9.87E+12(7)	19.59(3)	19.60(4)	19.15(2)	18.33 (1)
fertility	97.73(4)	689.85(6)	4.76E+03(7)	95.39 (1)	96.22(2)	96.52(3)	102.74(5)
flow	72.44(5)	4.16E+09(6)	2.45E+17(7)	69.66(2)	71.36(3)	72.02(4)	63.16 (1)
forest	98.09 (1)	171.15(6)	781.11(7)	99.11(4)	98.24(2)	98.60(3)	100.18(5)
servo	20.81(5)	3.63E+15(7)	1.83E+15(6)	19.62(4)	18.98(3)	18.52 (1)	18.75(2)
slump	93.90(5)	3.61E+10(6)	7.97E+16(7)	85.55(3)	83.96(2)	77.52 (1)	87.43(4)
traffic	48.05(2)	4.62E+04(6)	3.50E+05(7)	48.98(4)	48.36(3)	43.16 (1)	49.83(5)
wine_red	66.14(6)	65.91(5)	167.07(7)	65.69(3)	65.70(4)	57.32 (1)	57.74(2)
wine_white	73.11(7)	59.29(3)	63.53(4)	72.88(5)	72.88(5)	57.93(2)	57.93 (1)
Avg. Rank	(4.44)	(5.67)	(6.56)	(3.28)	(3.17)	(2.00)	(2.89)

Table 2: The 3-fold cross validation relative mean squared error and Friedman ranks for all datasets when the best hyperparameter configuration trial (Best), linear regression via least squared with the option of adding features (LRX) or not (LR), non-hyperparametric stepwise regression adding features (SWRX) or not (SWR) and non-hyperparametric stepwise regression adaptation with stop criterion adding features (SWRSCX) or not (SWRSC), all taking into account several baseline systems (kNNR, Ridge, Lasso and SVR) and the RS sampling strategy.