

Boosting with copula-based components: supplementary material

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1 Additional tables from the simulation study

Table 1 Results of simulation in terms of the likelihood, with the standard deviation in parentheses.

Learning rate	1 Covariate	2 Covariates	3 Covariates	4 Covariates	5 Covariates	6 Covariates
Setting one						
0.33	-201.84 (14.98)	-199.92 (13.7)	-199.7 (13.54)	-200.14 (13.5)	-200.13 (13.63)	-200.66 (13.71)
0.67	-201.48 (14.22)	-199.86 (13.74)	-199.79 (13.73)	-199.73 (13.67)	-199.97 (13.6)	-200.36 (13.63)
1	-201.51 (14.14)	-199.67 (13.66)	-199.72 (13.73)	-199.53 (13.73)	-199.98 (13.7)	-200.31 (13.64)
Setting two						
0.33	-243.65 (12.33)	-240.36 (11.78)	-239.54 (11.67)	-239.05 (11.61)	-238.81 (11.33)	-238.3 (11.42)
0.67	-242.12 (12.13)	-240.14 (11.89)	-239 (11.59)	-238.71 (11.33)	-238.36 (11.21)	-238 (11.32)
1	-241.78 (11.83)	-240.06 (11.84)	-239.31 (11.8)	-238.76 (11.25)	-238.27 (11.44)	-238.04 (11.48)
Setting three						
0.33	-264.04 (11.38)	-261.39 (10.75)	-261.25 (10.9)	-261.47 (11.08)	-261.3 (10.93)	-261.19 (10.91)
0.67	-264.07 (11.73)	-262.47 (11.47)	-262.56 (11.58)	-263.37 (12.05)	-263.28 (11.65)	-263.04 (11.7)
1	-264.42 (11.81)	-263.93 (12.32)	-263.77 (12.35)	-265.11 (12.89)	-264.86 (12.43)	-264.42 (12.39)
Setting four						
0.33	-296.25 (10.37)	-293.84 (10.57)	-293.32 (10.71)	-293.48 (11.09)	-293.44 (10.95)	-293.57 (11.1)
0.67	-311.11 (7.68)	-309.67 (7.80)	-308.91 (7.88)	-308.26 (7.93)	-307.53 (7.86)	-307.17 (7.89)
1	-294.73 (10.34)	-294.25 (11.27)	-294.64 (11.69)	-295.36 (12.06)	-295.4 (12.57)	-296.02 (12.54)

Table 2 Results of simulation in terms of the AUC, with the standard deviation in parentheses.

Learning rate	1 Covariate	2 Covariates	3 Covariates	4 Covariates	5 Covariates	6 Covariates
Setting one						
0.33	0.8838 (0.0176)	0.886 (0.0167)	0.8866 (0.0168)	0.8866 (0.0167)	0.8869 (0.017)	0.8875 (0.0171)
0.67	0.8844 (0.0178)	0.8864 (0.0164)	0.8872 (0.0168)	0.8867 (0.0167)	0.887 (0.0164)	0.8875 (0.0169)
1	0.8843 (0.0176)	0.8865 (0.0162)	0.8872 (0.0167)	0.8867 (0.017)	0.8876 (0.0163)	0.8873 (0.0169)
Setting two						
0.33	0.8246 (0.0201)	0.8271 (0.0197)	0.8287 (0.0193)	0.8305 (0.0189)	0.8309 (0.0191)	0.8314 (0.0197)
0.67	0.8256 (0.0192)	0.8283 (0.0198)	0.8296 (0.0199)	0.8305 (0.0195)	0.8318 (0.019)	0.8316 (0.0194)
1	0.8262 (0.0197)	0.8288 (0.0196)	0.8293 (0.0195)	0.8304 (0.019)	0.8312 (0.0197)	0.8315 (0.0189)
Setting three						
0.33	0.7734 (0.0246)	0.7788 (0.0228)	0.7785 (0.0235)	0.7797 (0.0231)	0.7794 (0.0233)	0.7798 (0.0228)
0.67	0.7745 (0.0243)	0.7788 (0.0234)	0.7795 (0.0232)	0.7798 (0.0236)	0.7793 (0.0231)	0.7803 (0.0231)
1	0.7746 (0.0239)	0.7788 (0.0230)	0.7796 (0.0233)	0.7800 (0.0230)	0.7792 (0.0229)	0.7802 (0.0233)
Setting four						
0.33	0.6841 (0.0275)	0.6915 (0.0264)	0.6940 (0.0263)	0.6950 (0.0271)	0.6953 (0.0265)	0.6955 (0.0265)
0.67	0.6765 (0.0324)	0.6840 (0.0305)	0.6895 (0.0290)	0.6883 (0.0283)	0.6880 (0.0285)	0.6871 (0.0265)
1	0.6876 (0.0266)	0.6929 (0.0262)	0.6937 (0.0264)	0.6942 (0.0262)	0.6945 (0.0280)	0.6950 (0.0265)

Table 3 Chosen number of components in setting three.

Learning rate	1 Covariate	2 Covariates	3 Covariates	4 Covariates	5 Covariates	6 Covariates
Likelihood						
0.33	743.44 (179.41)	367.26 (99.57)	228.17 (58.39)	178.87 (53.64)	133.97 (39.02)	105.64 (27.64)
0.67	439.74 (198.25)	219.11 (102.37)	136.33 (57.45)	103.33 (47.03)	77.47 (33.46)	62.41 (24.49)
1	289.06 (150.99)	155.92 (86.42)	97.98 (47.76)	76.73 (42.6)	57.14 (28.77)	45.66 (21.73)
AUC						
0.33	386.99 (355.33)	262.95 (176.69)	174.2 (99.41)	151.01 (89.3)	112.78 (62.78)	87.64 (46.11)
0.67	282.41 (294.81)	192.28 (159.3)	127.98 (88.55)	103.04 (83.7)	79.71 (58.7)	61.34 (42.8)
1	241.3 (258.41)	151.31 (143.08)	92.11 (82.56)	74.38 (71.5)	59.56 (55.32)	45.86 (39.99)