Supplementary Material

Table S1 & S2: User and producer accuracies of all performed classifications

Table S1

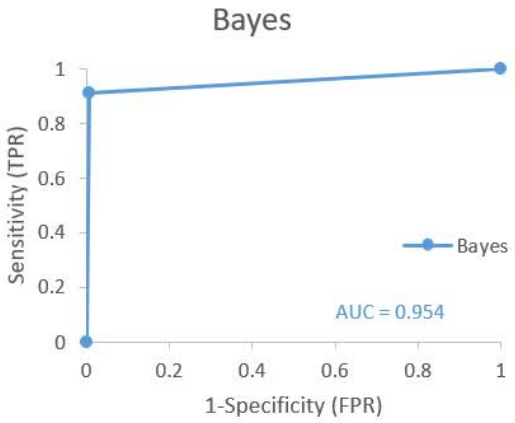
		Favourable conditions															
		100m altitude								30m altitude							
		250 samples Scenario 1				50 samples Scenario 2				250 samples Scenario 3				50 samples Scenario 4			
		Eelgrass		Sand		Eelgrass		Sand		Eelgrass		Sand		Eelgrass		Sand	
Classifier	Hyper-parameter	PA	UA	PA	UA	PA	UA	PA	UA	PA	UA	PA	UA	PA	UA	PA	UA
Bayes		0.915	0.996	0.993	0.855	0.972	0.938	0.873	0.939	0.915	0.985	0.981	0.895	0.957	0.941	0.918	0.941
DT	DT Depth 1	0.968	0.834	0.620	0.907	0.979	0.818	0.570	0.931	0.954	0.865	0.798	0.927	0.940	0.877	0.822	0.910
	DT Depth 5	0.865	0.897	0.803	0.750	0.929	0.847	0.669	0.826	0.904	0.969	0.962	0.881	0.840	0.967	0.962	0.816
	DT Depth 10	0.865	0.897	0.803	0.750	0.929	0.847	0.669	0.826	0.904	0.969	0.962	0.881	0.840	0.967	0.962	0.816
	DT Depth 15	0.865	0.897	0.803	0.750	0.929	0.847	0.669	0.826	0.904	0.969	0.962	0.881	0.840	0.967	0.962	0.816
	DT Depth 20	0.865	0.897	0.803	0.750	0.929	0.847	0.669	0.826	0.904	0.969	0.962	0.881	0.840	0.967	0.962	0.816
KNN	KNN K1	0.940	0.971	0.944	0.887	0.861	0.900	0.810	0.747	0.954	0.950	0.933	0.937	0.893	0.900	0.865	0.857
	KNN K5	0.940	0.971	0.944	0.887	0.861	0.900	0.810	0.747	0.950	0.967	0.957	0.934	0.936	0.877	0.822	0.905
	KNN K10	0.940	0.971	0.944	0.887	0.521	0.881	0.964	0.799	0.918	0.952	0.938	0.894	0.947	0.866	0.803	0.918
	KNN K15	0.940	0.971	0.944	0.887	0.929	0.847	0.669	0.826	0.904	0.969	0.962	0.881	0.954	0.862	0.793	0.927
	KNN K20	0.954	0.944	0.887	0.906	0.893	0.837	0.655	0.756	0.929	0.922	0.894	0.903	0.940	0.863	0.798	0.907
RT	RT Depth 1	0.968	0.834	0.620	0.907	0.947	0.834	0.627	0.856	0.922	0.896	0.856	0.890	0.922	0.912	0.880	0.893
	RT Depth 5	0.904	0.924	0.852	0.818	0.929	0.876	0.739	0.840	0.925	0.959	0.947	0.904	0.918	0.935	0.913	0.892
	RT Depth 10	0.883	0.929	0.866	0.788	0.929	0.842	0.655	0.823	0.929	0.967	0.957	0.909	0.922	0.899	0.861	0.891
	RT Depth 15	0.883	0.936	0.880	0.791	0.936	0.851	0.676	0.842	0.943	0.953	0.938	0.924	0.922	0.887	0.841	0.888
	RT Depth 20	0.875	0.928	0.866	0.778	0.922	0.869	0.725	0.824	0.929	0.967	0.957	0.909	0.900	0.907	0.875	0.867
SVM	SVM linear_C2	0.794	0.676	0.246	0.376	0.698	0.669	0.317	0.346	0.957	0.968	0.957	0.943	0.922	0.963	0.952	0.900
	SVM linear_C4	0.922	0.912	0.824	0.842	0.936	0.936	0.873	0.873	0.957	0.968	0.957	0.943	0.911	0.959	0.947	0.887
	SVM linear_C6	0.968	0.961	0.923	0.936	0.708	0.737	0.500	0.464	0.968	0.958	0.942	0.956	0.918	0.959	0.947	0.895
	SVM linear_C8	0.815	0.741	0.437	0.544	0.826	0.928	0.873	0.717	0.964	0.982	0.976	0.953	0.918	0.956	0.942	0.895
	SVM linear_C10	0.776	0.688	0.303	0.406	0.826	0.928	0.873	0.717	0.972	0.945	0.923	0.960	0.918	0.956	0.942	0.895
	SVM rbf_g0.0001_C1	0.989	0.808	0.535	0.962	0.979	0.836	0.620	0.936	0.957	0.903	0.861	0.937	0.964	0.831	0.736	0.939
	SVM rbf_g0.0001_C1000	0.972	0.978	0.958	0.944	0.900	0.941	0.887	0.818	0.947	0.971	0.962	0.930	0.925	0.939	0.918	0.901
	SVM rbf_g0.0001_C1000000	0.797	0.926	0.873	0.685	0.897	0.940	0.887	0.813	0.957	0.961	0.947	0.943	0.861	0.938	0.923	0.831
	SVM rbf_g1_C1	1.000	0.664	0.000	undefined	0.996	0.665	0.007	0.500	1.000	0.576	0.005	1.000	1.000	0.575	0.000	undefined
	SVM rbf_g1_C1000	0.996	0.683	0.085	0.923	0.996	0.665	0.007	0.500	1.000	0.608	0.130	1.000	1.000	0.607	0.125	1.000
	SVM rbf_g1_C1000000	0.996	0.683	0.085	0.923	0.996	0.665	0.007	0.500	0.130	1.000	1.000	0.608	1.000	0.607	0.125	1.000
	SVM rbf_g1000_C1	0.000	undefined	1.000	0.664	1.000	0.664	0.000	undefined	1.000	0.575	0.000	undefined	1.000	0.575	0.000	undefined
	SVM rbf_g1000_C1000	1.000	0.667	0.014	1.000	1.000	0.664	0.000	undefined	1.000	0.576	0.005	1.000	1.000	0.575	0.000	undefined
	SVM rbf_g1_C1000000	0.996	0.683	0.085	0.923	1.000	0.664	0.000	undefined	1.000	0.576	0.005	1.000	1.000	0.575	0.000	undefined

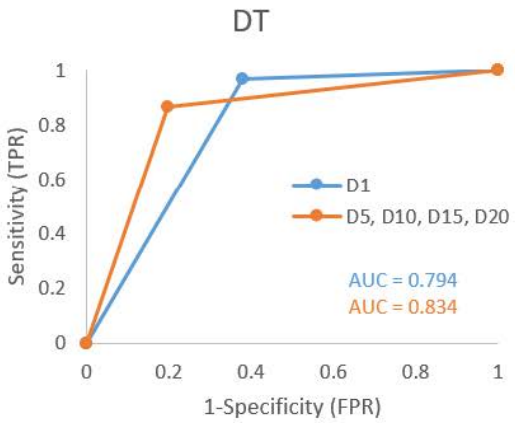
Table S2

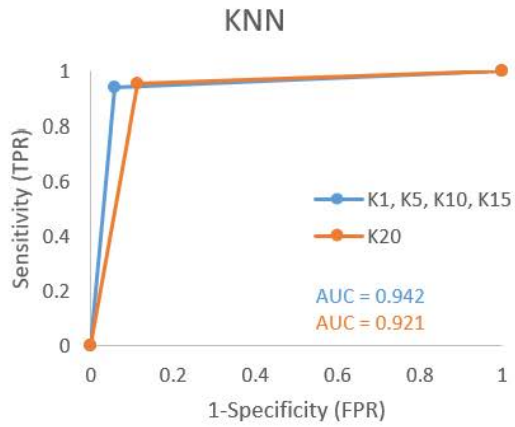
		Unfavourable conditions															
		100m altitude								30m altitude							
		250 samples Scenario 5				50 samples Scenario 6				250 samples Scenario 7				50 samples Scenario 8			
		Eelgrass		Sand		Eelgrass		Sand		Eelgrass		Sand		Eelgrass		Sand	
Classifier	Hyper-parameter	PA	UA	PA	UA	PA	UA	PA	UA	PA	UA	PA	UA	PA	UA	PA	UA
Bayes		0.889	0.847	0.738	0.804	0.654	0.701	0.547	0.492	0.895	0.902	0.898	0.891	0.895	0.719	0.633	0.852
DT	DT Depth 1	0.921	0.715	0.401	0.758	0.886	0.736	0.483	0.722	0.957	0.911	0.902	0.953	0.914	0.933	0.931	0.912
	DT Depth 5	0.696	0.841	0.785	0.614	0.879	0.707	0.407	0.673	0.922	0.908	0.902	0.917	0.942	0.801	0.755	0.925
	DT Depth 10	0.738	0.672	0.779	0.829	0.879	0.707	0.407	0.673	0.922	0.908	0.902	0.917	0.942	0.801	0.755	0.925
	DT Depth 15	0.779	0.829	0.738	0.672	0.750	0.691	0.453	0.527	0.922	0.908	0.902	0.917	0.942	0.801	0.755	0.925
	DT Depth 20	0.779	0.829	0.738	0.672	0.750	0.691	0.453	0.527	0.922	0.908	0.902	0.917	0.942	0.801	0.755	0.925
KNN	KNN K1	0.868	0.824	0.698	0.764	0.686	0.688	0.494	0.491	0.883	0.901	0.898	0.880	0.907	0.900	0.894	0.901
	KNN K5	0.657	0.739	0.857	0.803	0.821	0.747	0.547	0.653	0.883	0.901	0.898	0.880	0.907	0.900	0.894	0.901
	KNN K10	0.875	0.759	0.547	0.729	0.401	0.742	0.914	0.713	0.883	0.901	0.898	0.880	0.907	0.900	0.894	0.901
	KNN K15	0.854	0.771	0.587	0.711	0.975	0.666	0.203	0.833	0.883	0.901	0.898	0.880	0.907	0.900	0.894	0.901
	KNN K20	0.893	0.740	0.488	0.737	0.989	0.643	0.105	0.857	0.883	0.901	0.898	0.880	0.907	0.900	0.894	0.901
RT	RT Depth 1	0.968	0.676	0.244	0.824	0.932	0.659	0.215	0.661	0.899	0.837	0.816	0.885	0.805	0.928	0.935	0.821
	RT Depth 5	0.907	0.777	0.576	0.792	0.825	0.702	0.430	0.602	0.965	0.919	0.910	0.961	0.747	0.938	0.953	0.798
	RT Depth 10	0.854	0.807	0.669	0.737	0.775	0.666	0.366	0.500	0.961	0.918	0.910	0.957	0.930	0.845	0.820	0.918
	RT Depth 15	0.882	0.802	0.645	0.771	0.775	0.666	0.366	0.500	0.953	0.928	0.922	0.950	0.883	0.876	0.869	0.877
	RT Depth 20	0.882	0.802	0.645	0.771	0.775	0.666	0.366	0.500	0.957	0.921	0.914	0.953	0.805	0.845	0.845	0.805
SVM	SVM linear_C2	0.800	0.842	0.756	0.699	0.907	0.683	0.314	0.675	0.160	0.182	0.249	0.220	0.949	0.884	0.869	0.942
	SVM linear_C4	0.446	0.553	0.413	0.314	0.889	0.677	0.308	0.631	0.195	0.195	0.159	0.159	0.949	0.884	0.869	0.942
	SVM linear_C6	0.461	0.542	0.366	0.294	0.843	0.740	0.517	0.669	0.253	0.228	0.102	0.115	0.914	0.864	0.849	0.904
	SVM linear_C8	0.507	0.947	0.953	0.543	0.554	0.610	0.424	0.369	0.249	0.225	0.098	0.111	0.949	0.884	0.869	0.942
	SVM linear_C10	0.846	0.829	0.715	0.741	0.593	0.634	0.442	0.400	0.965	0.770	0.698	0.950	0.949	0.884	0.869	0.942
	SVM rbf_g0.0001_C1	0.996	0.640	0.087	0.938	0.000	undefined	1.000	0.619	0.930	0.930	0.927	0.927	0.887	0.934	0.935	0.888
	SVM rbf_g0.0001_C1000	0.496	0.709	0.669	0.449	0.975	0.664	0.198	0.829	0.949	0.921	0.914	0.945	0.957	0.914	0.906	0.953
	SVM rbf_g0.0001_C1000000	0.496	0.709	0.669	0.449	0.539	0.568	0.331	0.306	0.965	0.667	0.494	0.931	0.957	0.914	0.906	0.953
	SVM rbf_g1_C1	1.000	0.626	0.029	1.000	0.993	0.621	0.012	0.500	0.911	0.720	0.629	0.870	0.996	0.545	0.127	0.969
	SVM rbf_g1_C1000	0.961	0.695	0.314	0.831	0.839	0.642	0.238	0.477	0.911	0.720	0.629	0.870	0.996	0.545	0.127	0.969
	SVM rbf_g1_C1000000	0.961	0.695	0.314	0.831	0.839	0.642	0.238	0.477	0.911	0.720	0.629	0.870	0.996	0.545	0.127	0.969
	SVM rbf_g1000_C1	0.000	undefined	1.000	0.619	0.000	undefined	1.000	0.619	1.000	0.513	0.004	1.000	1.000	0.512	0.000	undefined
	SVM rbf_g1000_C1000	1.000	0.629	0.041	1.000	0.006	1.000	1.000	0.621	1.000	0.513	0.004	1.000	1.000	0.512	0.000	undefined
	SVM rbf_g1_C1000000	1.000	0.629	0.041	1.000	1.000	0.621	0.006	1.000	1.000	0.513	0.004	1.000	0.996	0.545	0.127	0.969

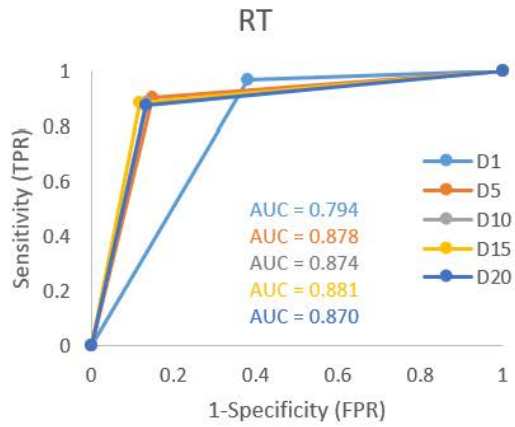
Receiver operator characteristic (ROC) curves

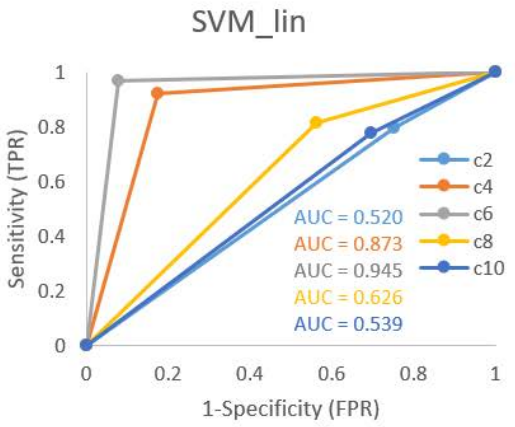
Scenario S1

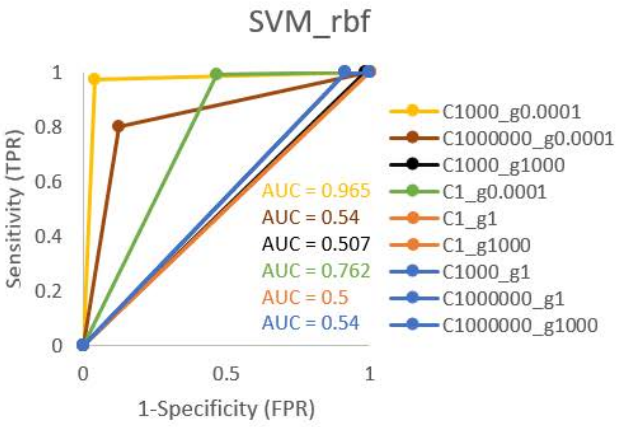




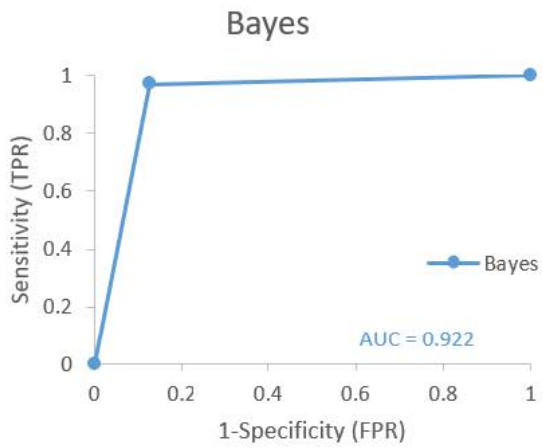


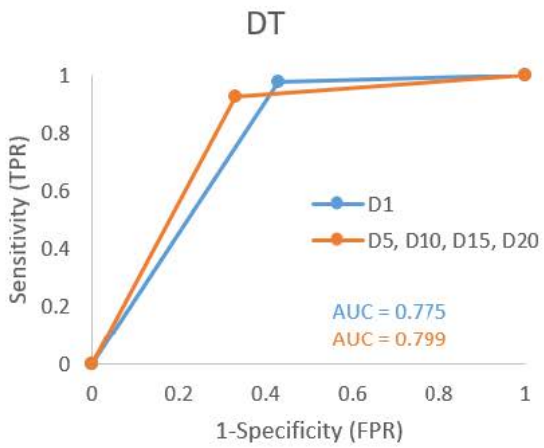


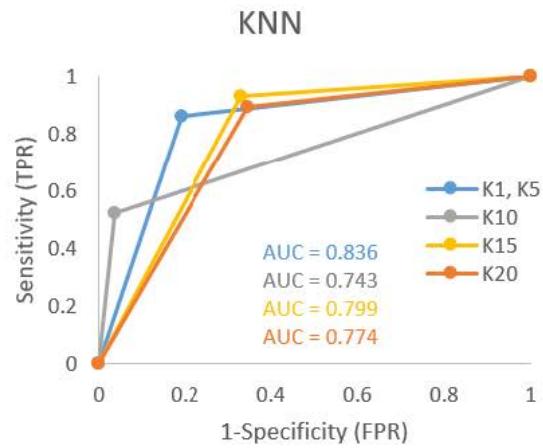


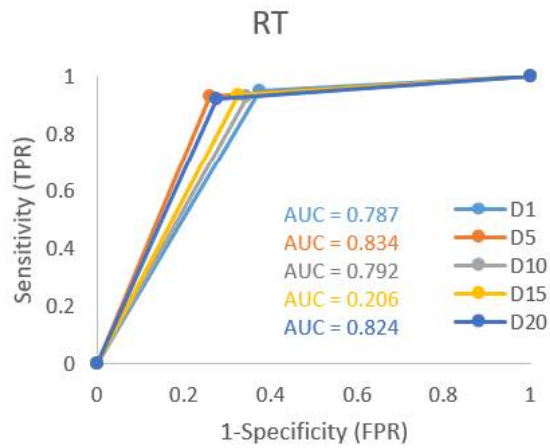


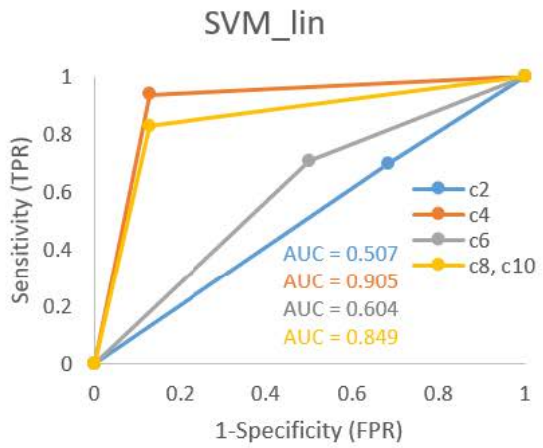
Scenario **S2**

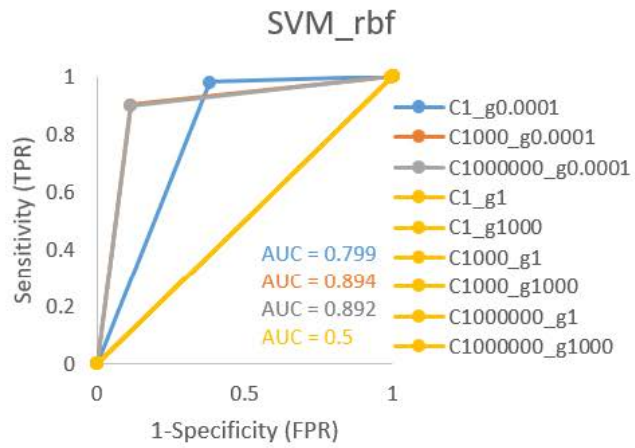

Bayes
Sensitivity (TPR)
1-Specificity (FPR)
Bayes
AUC = 0.922


DT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5, D10, D15, D20
AUC = 0.775
AUC = 0.799

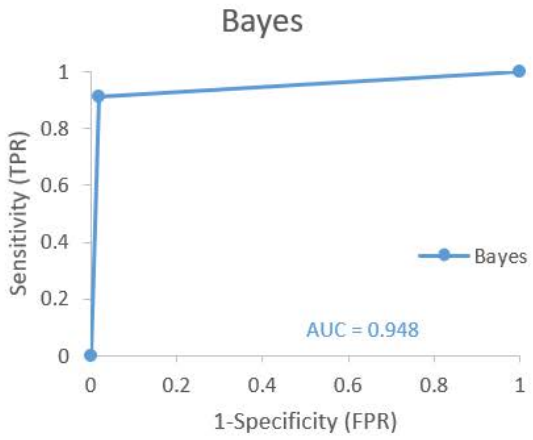

KNN
Sensitivity (TPR)
1-Specificity (FPR)
K1, K5
K10
K15
K20
AUC = 0.836
AUC = 0.743
AUC = 0.799
AUC = 0.774

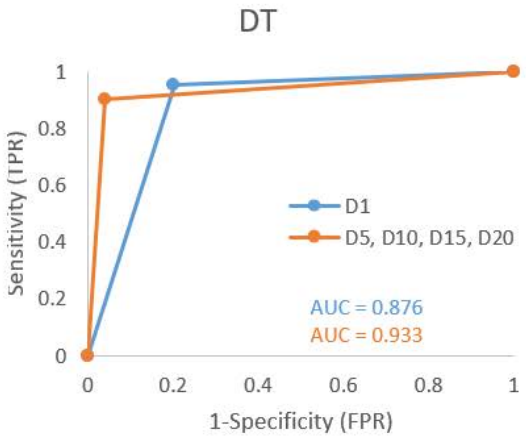

RT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5
D10
D15
D20
AUC = 0.787
AUC = 0.834
AUC = 0.792
AUC = 0.206
AUC = 0.824

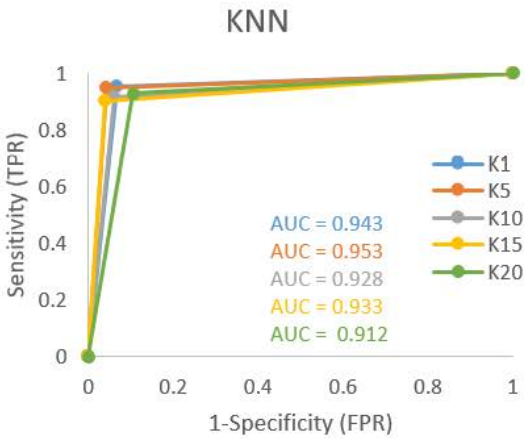

SVM_lin
Sensitivity (TPR)
1-Specificity (FPR)
c2
c4
c6
c8, c10
AUC = 0.507
AUC = 0.905
AUC = 0.604
AUC = 0.849

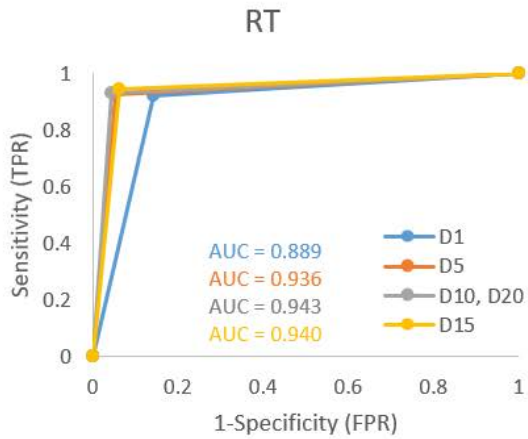

SVM_rbf
Sensitivity (TPR)
1-Specificity (FPR)
C1_g0.0001
C1000_g0.0001
C1000000_g0.0001
C1_g1
C1_g1000
C1000_g1
C1000_g1000
C1000000_g1
C1000000_g1000
AUC = 0.799
AUC = 0.894
AUC = 0.892
AUC = 0.5

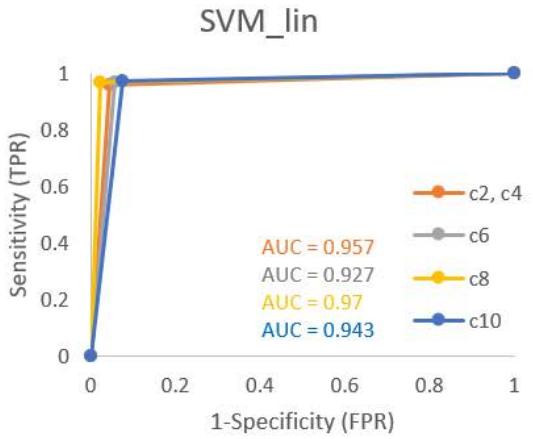
Scenario S3

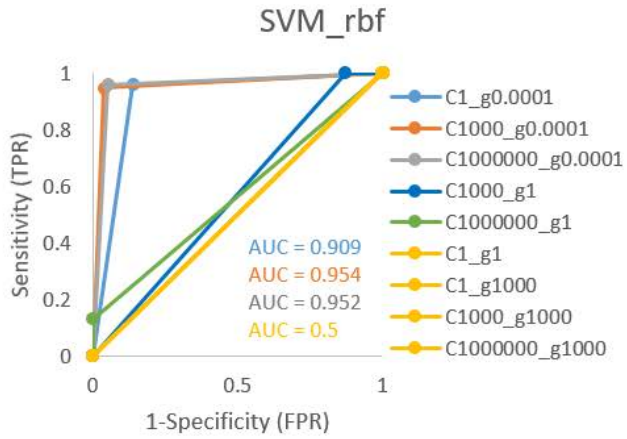

Bayes
Sensitivity (TPR)
1-Specificity (FPR)
Bayes
AUC = 0.948


DT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5, D10, D15, D20
AUC = 0.876
AUC = 0.933

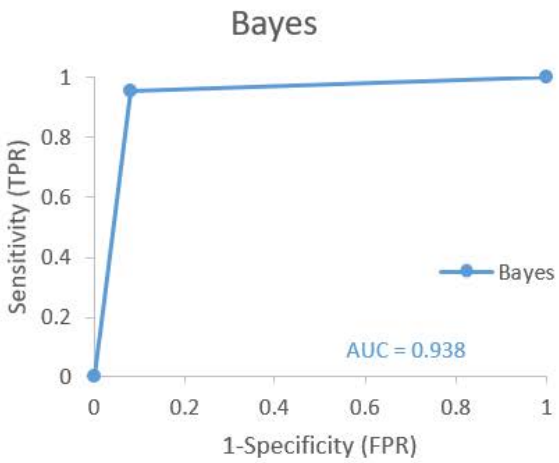

KNN
Sensitivity (TPR)
1-Specificity (FPR)
K1
K5
K10
K15
K20
AUC = 0.943
AUC = 0.953
AUC = 0.928
AUC = 0.933
AUC = 0.912

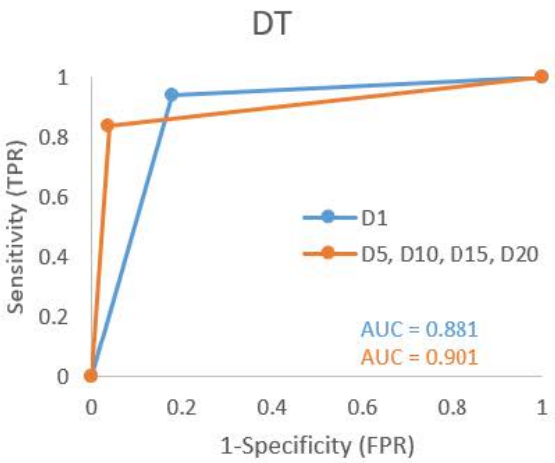

RT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5
D10, D20
D15
AUC = 0.889
AUC = 0.936
AUC = 0.943
AUC = 0.940

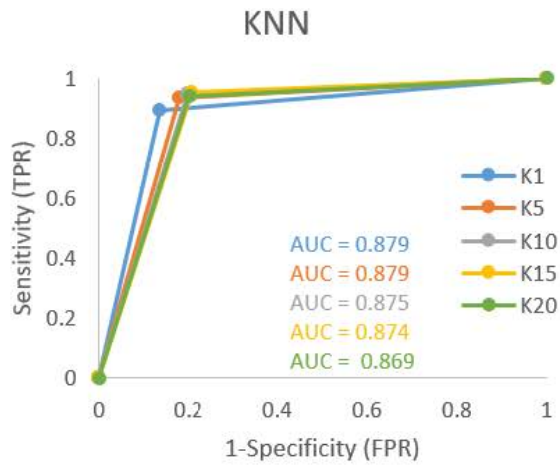

SVM_lin
Sensitivity (TPR)
1-Specificity (FPR)
c2, c4
c6
c8
c10
AUC = 0.957
AUC = 0.927
AUC = 0.97
AUC = 0.943

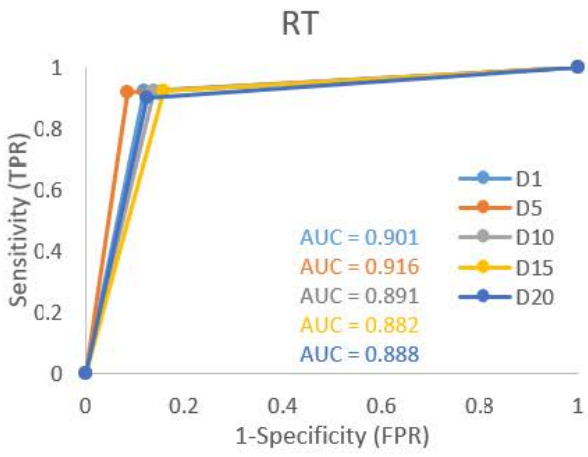

SVM_rbf
Sensitivity (TPR)
1-Specificity (FPR)
C1_g0.0001
C1000_g0.0001
C1000000_g0.0001
C1000_g1
C1000000_g1
C1_g1
C1_g1000
C1000_g1000
C1000000_g1000
AUC = 0.909
AUC = 0.954
AUC = 0.952
AUC = 0.5

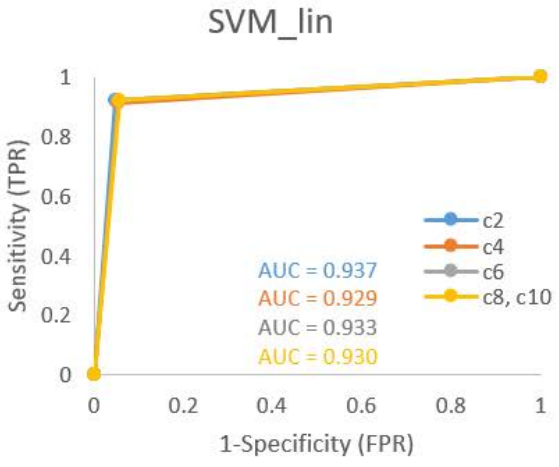
Scenario S4

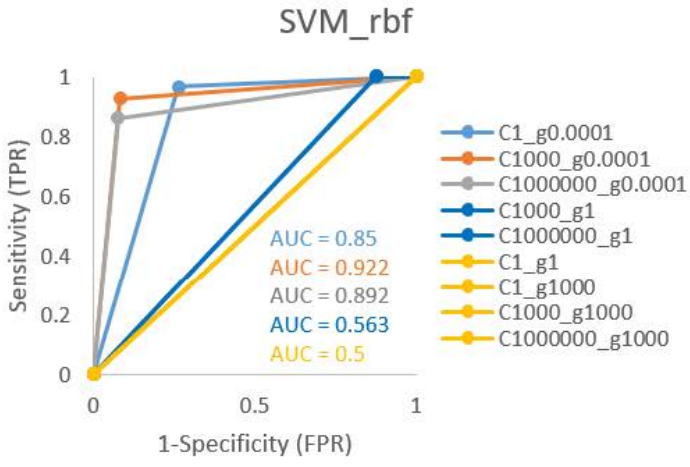

Bayes
Sensitivity (TPR)
1-Specificity (FPR)
Bayes
AUC = 0.938


DT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5, D10, D15, D20
AUC = 0.881
AUC = 0.901

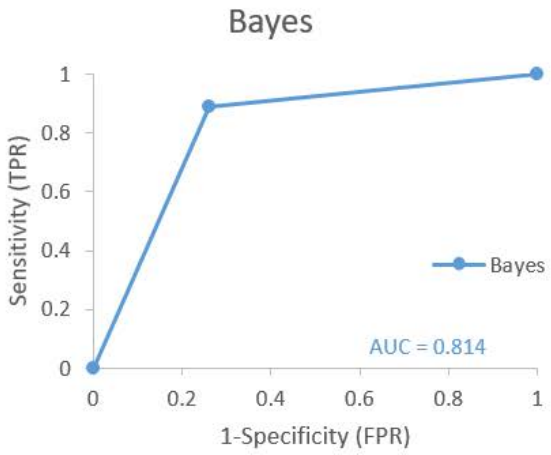

KNN
Sensitivity (TPR)
1-Specificity (FPR)
K1
K5
K10
K15
K20
AUC = 0.879
AUC = 0.879
AUC = 0.875
AUC = 0.874
AUC = 0.869

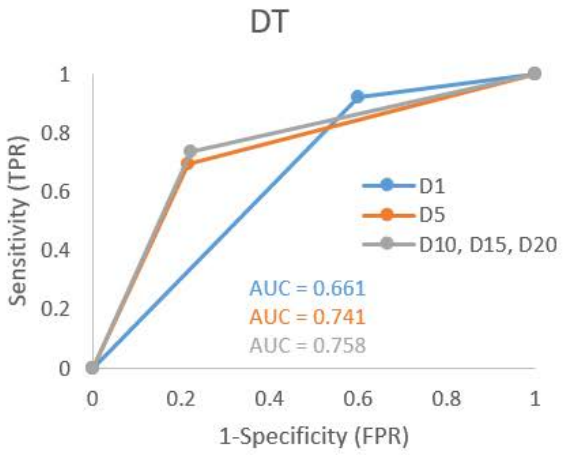

RT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5
D10
D15
D20
AUC = 0.901
AUC = 0.916
AUC = 0.891
AUC = 0.882
AUC = 0.888

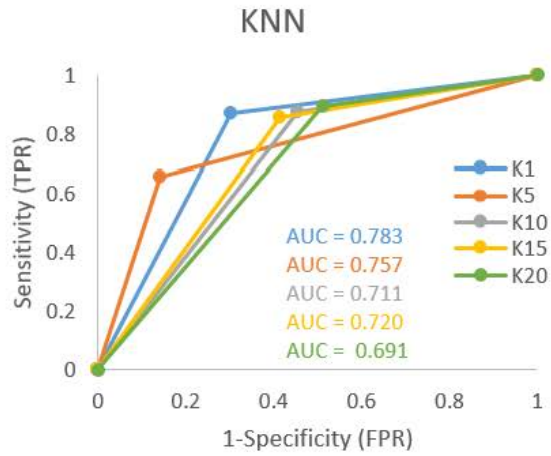

SVM_lin
Sensitivity (TPR)
1-Specificity (FPR)
c2
c4
c6
c8, c10
AUC = 0.937
AUC = 0.929
AUC = 0.933
AUC = 0.930

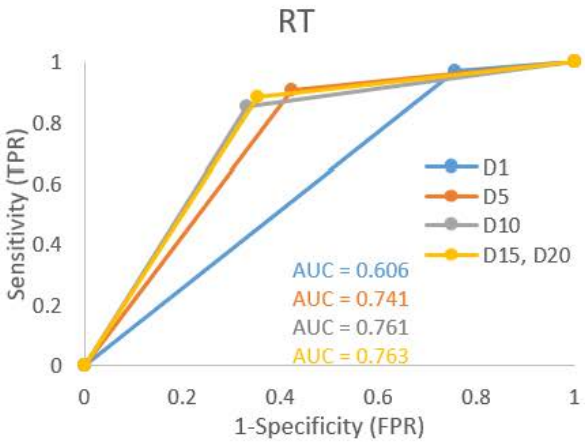

SVM_rbf
Sensitivity (TPR)
1-Specificity (FPR)
C1_g0.0001
C1000_g0.0001
C1000000_g0.0001
C1000_g1
C1000000_g1
C1_g1
C1_g1000
C1000_g1000
C1000000_g1000
AUC = 0.85
AUC = 0.922
AUC = 0.892
AUC = 0.563
AUC = 0.5

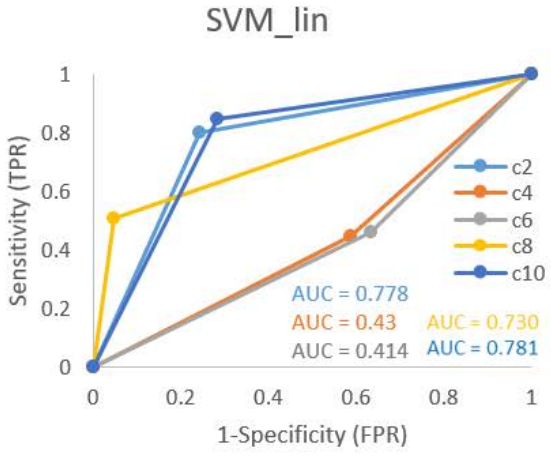
Scenario S5

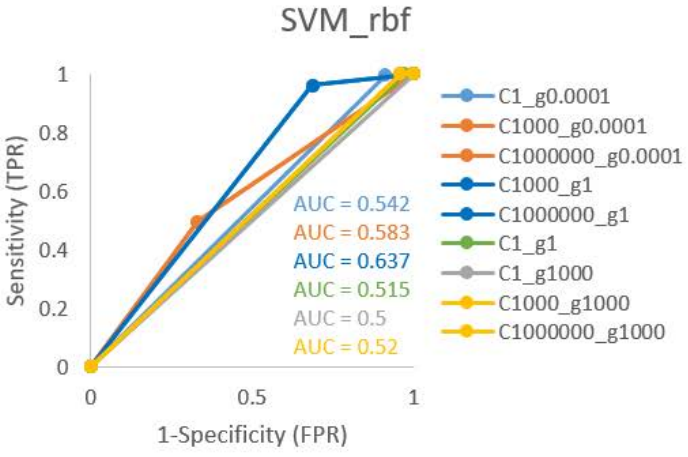

Bayes
Sensitivity (TPR)
1-Specificity (FPR)
Bayes
AUC = 0.814


DT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5
D10, D15, D20
AUC = 0.661
AUC = 0.741
AUC = 0.758

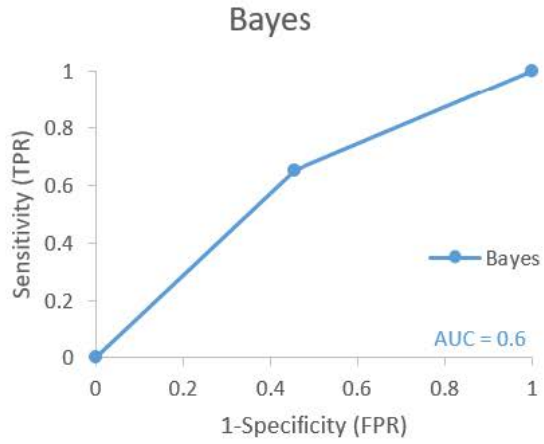

KNN
Sensitivity (TPR)
1-Specificity (FPR)
K1
K5
K10
K15
K20
AUC = 0.783
AUC = 0.757
AUC = 0.711
AUC = 0.720
AUC = 0.691

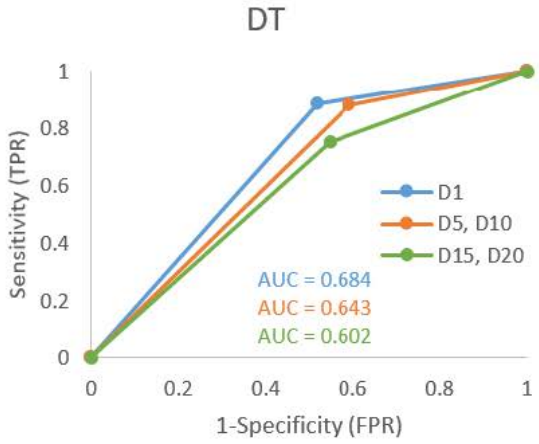

RT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5
D10
D15, D20
AUC = 0.606
AUC = 0.741
AUC = 0.761
AUC = 0.763

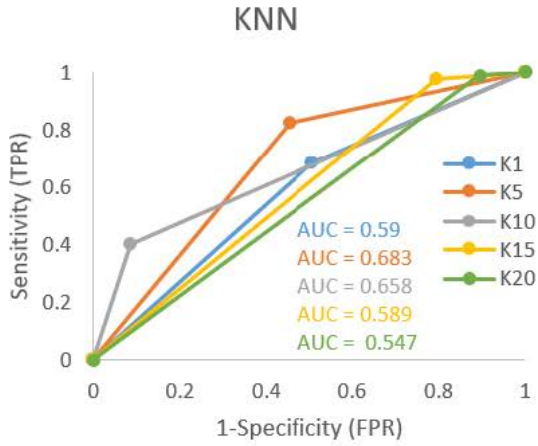

SVM_lin
Sensitivity (TPR)
1-Specificity (FPR)
c2
c4
c6
c8
c10
AUC = 0.778
AUC = 0.43
AUC = 0.414
AUC = 0.730
AUC = 0.781

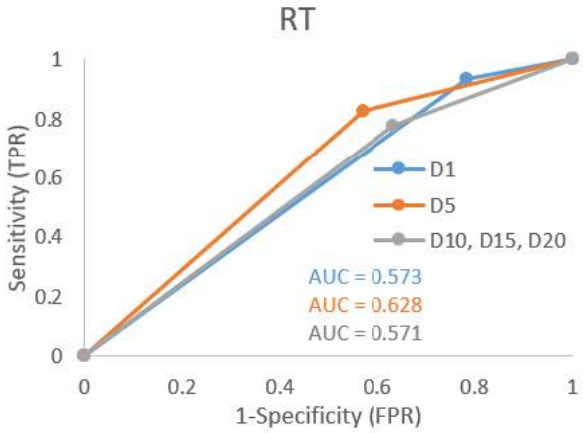

SVM_rbf
Sensitivity (TPR)
1-Specificity (FPR)
C1_g0.0001
C1000_g0.0001
C1000000_g0.0001
C1000_g1
C1000000_g1
C1_g1
C1_g1000
C1000_g1000
C1000000_g1000
AUC = 0.542
AUC = 0.583
AUC = 0.637
AUC = 0.515
AUC = 0.5
AUC = 0.52

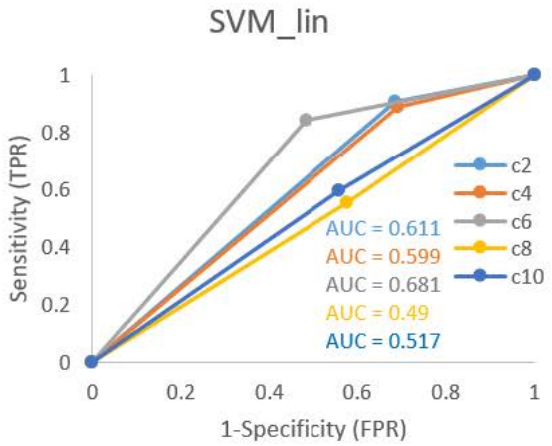
Scenario **S6**

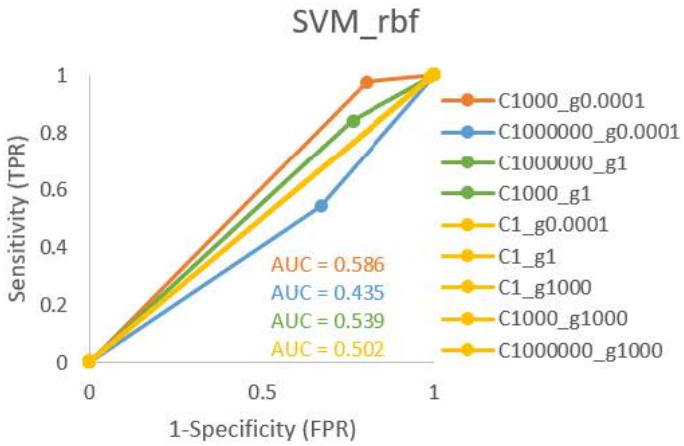

Bayes
Sensitivity (TPR)
1-Specificity (FPR)
Bayes
AUC = 0.6


DT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5, D10
D15, D20
AUC = 0.684
AUC = 0.643
AUC = 0.602

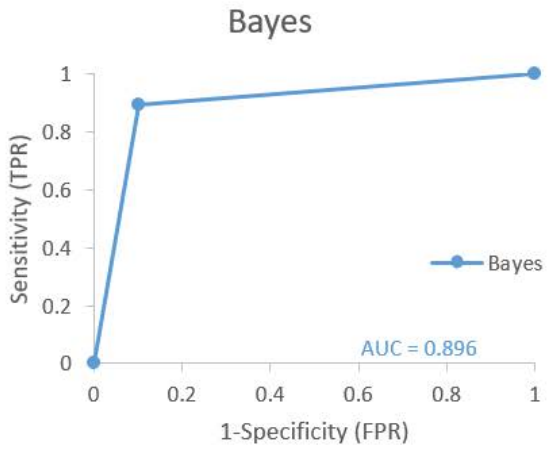

KNN
Sensitivity (TPR)
1-Specificity (FPR)
K1
K5
K10
K15
K20
AUC = 0.59
AUC = 0.683
AUC = 0.658
AUC = 0.589
AUC = 0.547

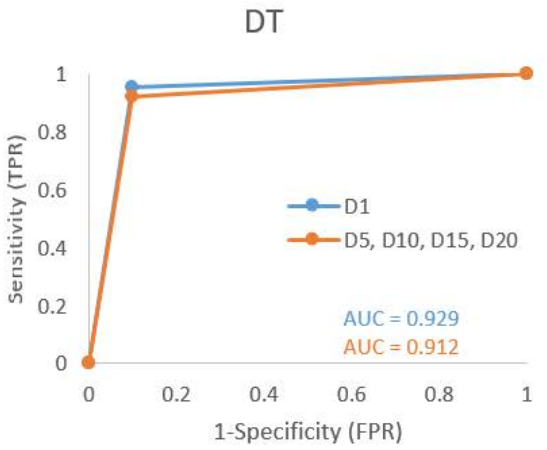

RT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5
D10, D15, D20
AUC = 0.573
AUC = 0.628
AUC = 0.571

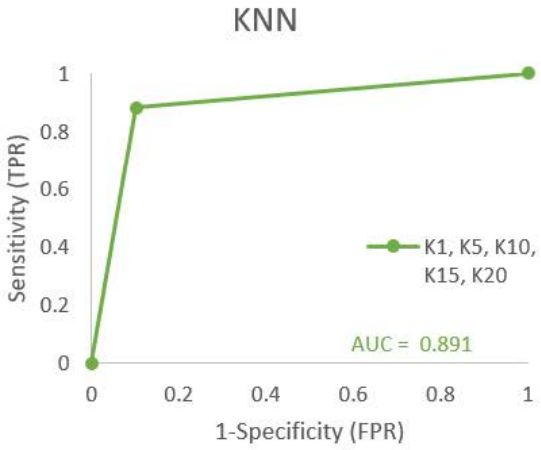

SVM_lin
Sensitivity (TPR)
1-Specificity (FPR)
c2
c4
c6
c8
c10
AUC = 0.611
AUC = 0.599
AUC = 0.681
AUC = 0.49
AUC = 0.517

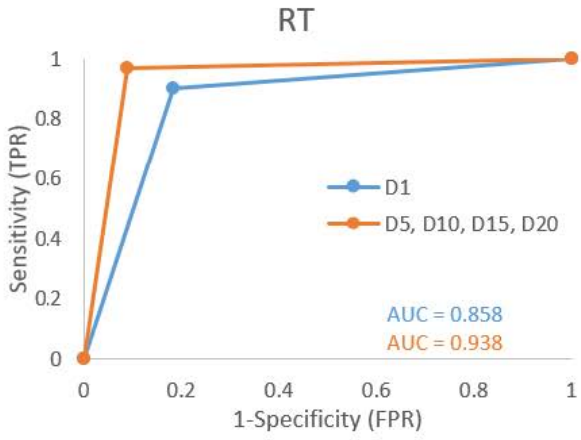

SVM_rbf
Sensitivity (TPR)
1-Specificity (FPR)
C1000_g0.0001
C1000000_g0.0001
C1000000_g1
C1000_g1
C1_g0.0001
C1_g1
C1_g1000
C1000_g1000
C1000000_g1000
AUC = 0.586
AUC = 0.435
AUC = 0.539
AUC = 0.502

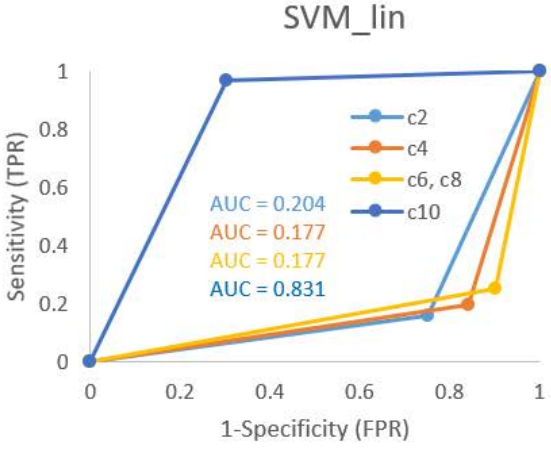
Scenario S7

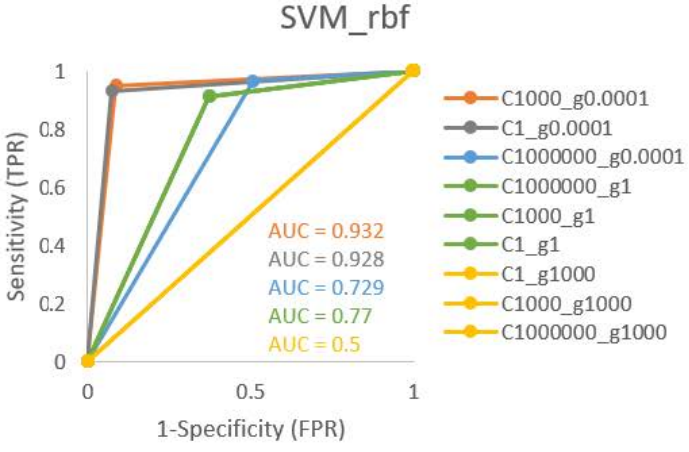

Bayes
Sensitivity (TPR)
1-Specificity (FPR)
Bayes
AUC = 0.896


DT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5, D10, D15, D20
AUC = 0.929
AUC = 0.912

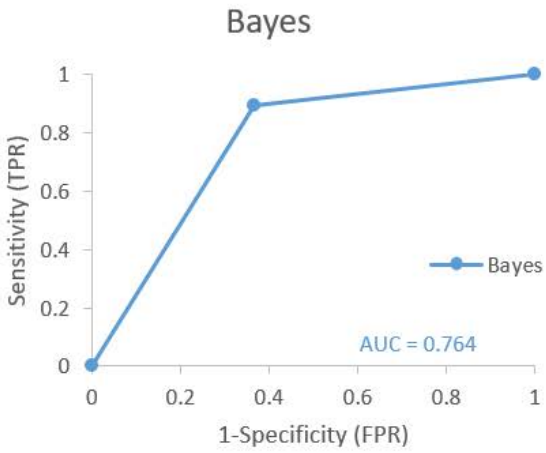

KNN
Sensitivity (TPR)
1-Specificity (FPR)
K1, K5, K10, K15, K20
AUC = 0.891

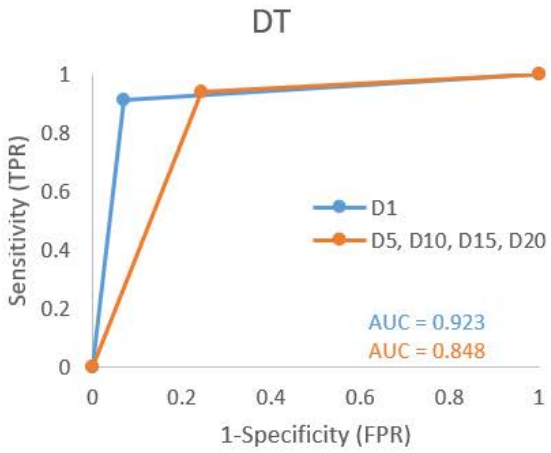

RT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5, D10, D15, D20
AUC = 0.858
AUC = 0.938

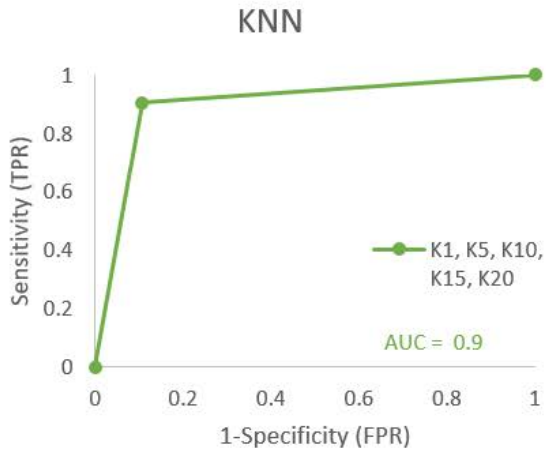

SVM_lin
Sensitivity (TPR)
1-Specificity (FPR)
c2
c4
c6, c8
c10
AUC = 0.204
AUC = 0.177
AUC = 0.177
AUC = 0.831

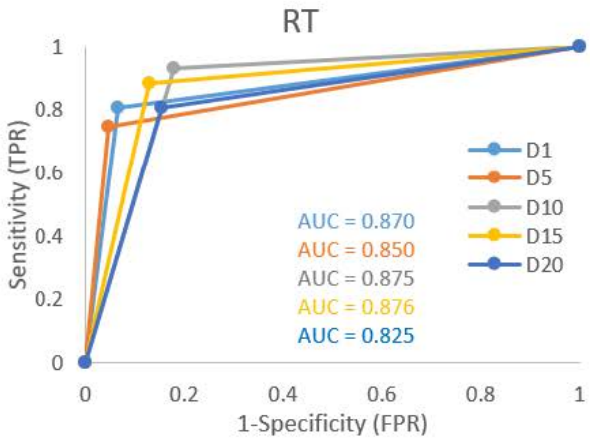

SVM_rbf
Sensitivity (TPR)
1-Specificity (FPR)
AUC = 0.932
AUC = 0.928
AUC = 0.729
AUC = 0.77
AUC = 0.5
C1000_g0.0001
C1_g0.0001
C1000000_g0.0001
C1000000_g1
C1000_g1
C1_g1
C1_g1000
C1000_g1000
C1000000_g1000

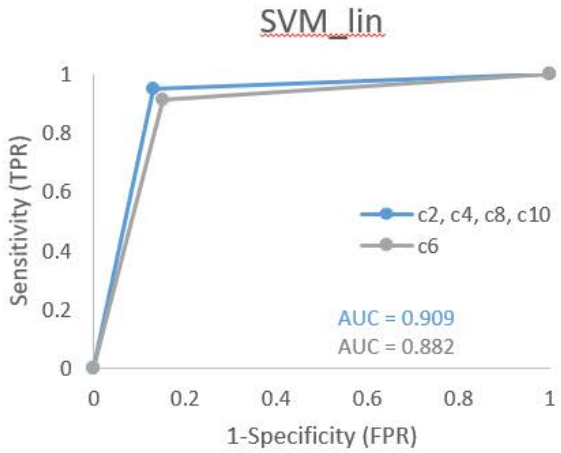
Scenario S8

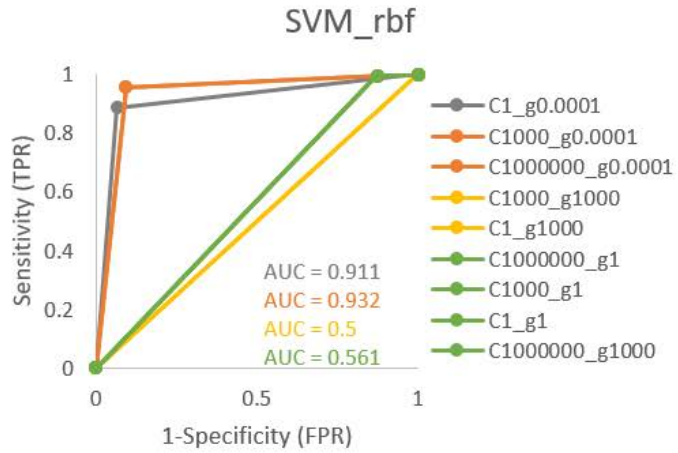

Bayes
Sensitivity (TPR)
1-Specificity (FPR)
Bayes
AUC = 0.764


DT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5, D10, D15, D20
AUC = 0.923
AUC = 0.848


KNN
Sensitivity (TPR)
1-Specificity (FPR)
K1, K5, K10, K15, K20
AUC = 0.9


RT
Sensitivity (TPR)
1-Specificity (FPR)
D1
D5
D10
D15
D20
AUC = 0.870
AUC = 0.850
AUC = 0.875
AUC = 0.876
AUC = 0.825


SVM_lin
Sensitivity (TPR)
1-Specificity (FPR)
c2, c4, c8, c10
c6
AUC = 0.909
AUC = 0.882


SVM_rbf
Sensitivity (TPR)
1-Specificity (FPR)
C1_g0.0001
C1000_g0.0001
C1000000_g0.0001
C1000_g1000
C1_g1000
C1000000_g1
C1000_g1
C1_g1
C1000000_g1000
AUC = 0.911
AUC = 0.932
AUC = 0.5
AUC = 0.561