Table 1. Results of Machine Learning Algorithms After Sequential Feature Selection_undersampling

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
GLM	No Feature Selection	82	86	77
	IG+RFE	89	91	86
	IG+GA	80	75	84
	IG+SA	81	86	75
	IG+BORUTA	80	77	82
	GR+RFE	86	89	84
	GR+GA	85	86	84
	GR+SA	74	57	91
	GR+BORUTA	82	84	80
	CFS+RFE	81	80	82
	CFS +GA	86	84	89
	CFS +SA	88	82	93
	CFS+BORUTA	84	93	75
	Kİ-KARE+RFE	82	82	82
	Kİ-KARE +GA	83	89	77
	Kİ-KARE +SA	83	82	84
	Kİ-KARE +BORUTA	80	77	82
	RELİEF+RFE	84	91	77
	RELİEF +GA	**93**	**93**	**93**
	RELİEF +SA	80	75	84
	RELİEF +BORUTA	86	84	89
	SU+RFE	85	84	86
	SU+GA	82	87	78
	SU+SA	88	96	79
	SU+BORUTA	89	91	86
KNN	No Feature Selection	63	66	60
	IG+RFE	83	82	84
	IG+GA	82	80	84
	IG+SA	84	91	77
	IG+BORUTA	84	84	84
	GR+RFE	82	77	86
	GR+GA	88	91	84
	GR+SA	76	82	70
	GR+BORUTA	81	80	82
	CFS+RFE	86	84	89
	CFS +GA	90	86	93
	CFS +SA	90	89	91
	CFS+BORUTA	89	91	86
	Kİ-KARE+RFE	86	82	91
	Kİ-KARE +GA	75	86	64
	Kİ-KARE +SA	72	64	80
	Kİ-KARE +BORUTA	83	82	84
	RELİEF+RFE	81	89	73
	RELİEF +GA	67	64	70
	RELİEF +SA	59	57	61
	RELİEF +BORUTA	61	70	52
	SU+RFE	67	67	67
	SU+GA	69	76	63
	SU+SA	88	91	84
	SU+BORUTA	88	87	88
NB	No Feature Selection	83	100	66
	IG+RFE	84	75	93

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	IG+GA	80	73	86
	IG+SA	77	80	75
	IG+BORUTA	81	75	86
	GR+RFE	81	77	84
	GR+GA	82	82	82
	GR+SA	81	73	89
	GR+BORUTA	78	73	84
	CFS+RFE	85	84	86
	CFS +GA	77	73	82
	CFS +SA	84	80	89
	CFS+BORUTA	88	86	89
	Kİ-KARE+RFE	84	84	84
	Kİ-KARE +GA	76	75	77
	Kİ-KARE +SA	75	68	82
	Kİ-KARE +BORUTA	81	73	89
	RELİEF+RFE	83	86	80
	RELİEF +GA	84	91	77
	RELİEF +SA	82	80	84
	RELİEF +BORUTA	81	75	86
	SU+RFE	**91**	**91**	**91**
	SU+GA	85	84	86
	SU+SA	84	89	79
	SU+BORUTA	84	76	93
SVMLİNEAR	No Feature Selection	48	52	43
	IG+RFE	88	91	84
	IG+GA	82	86	77
	IG+SA	84	86	82
	IG+BORUTA	81	77	84
	GR+RFE	85	89	82
	GR+GA	88	89	86
	GR+SA	77	82	73
	GR+BORUTA	82	77	86
	CFS+RFE	83	80	86
	CFS +GA	88	86	89
	CFS +SA	88	82	93
	CFS+BORUTA	86	84	89
	Kİ-KARE+RFE	84	82	86
	Kİ-KARE +GA	85	91	80
	Kİ-KARE +SA	76	68	84
	Kİ-KARE +BORUTA	83	80	86
	RELİEF+RFE	83	89	77
	RELİEF +GA	**92**	**89**	**95**
	RELİEF +SA	80	75	84
	RELİEF +BORUTA	90	86	93
	SU+RFE	89	91	86
	SU+GA	85	82	88
	SU+SA	86	93	79
	SU+BORUTA	88	87	88
SVMPOLY	No Feature Selection			
	IG+RFE	88	86	89
	IG+GA	82	84	80
	IG+SA	82	91	73
	IG+BORUTA	83	82	84
	GR+RFE	83	84	82
	GR+GA	90	89	91
	GR+SA	83	86	80

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	GR+BORUTA	83	82	84
	CFS+RFE	80	77	82
	CFS +GA	89	89	89
	CFS +SA	89	82	95
	CFS+BORUTA	**91**	**93**	**89**
	Kİ-KARE+RFE	83	84	82
	Kİ-KARE +GA	83	91	75
	Kİ-KARE +SA	76	68	84
	Kİ-KARE +BORUTA	82	75	89
	RELİEF+RFE	83	86	80
	RELİEF +GA	**91**	**89**	**93**
	RELİEF +SA	80	75	84
	RELİEF +BORUTA	86	82	91
	SU+RFE	86	87	86
	SU+GA	84	84	84
	SU+SA	86	93	79
	SU+BORUTA	86	89	84
SVMRADİAL	No Feature Selection	61	57	66
	IG+RFE	86	86	86
	IG+GA	82	80	84
	IG+SA	85	89	82
	IG+BORUTA	82	75	89
	GR+RFE	85	86	84
	GR+GA	**90**	**86**	**93**
	GR+SA	86	84	89
	GR+BORUTA	82	75	89
	CFS+RFE	85	82	89
	CFS +GA	83	77	89
	CFS +SA	86	82	91
	CFS+BORUTA	89	91	86
	Kİ-KARE+RFE	88	82	93
	Kİ-KARE +GA	84	84	84
	Kİ-KARE +SA	78	68	89
	Kİ-KARE +BORUTA	83	77	89
	RELİEF+RFE	83	82	84
	RELİEF +GA	88	80	95
	RELİEF +SA	82	72	91
	RELİEF +BORUTA	85	80	91
	SU+RFE	89	89	88
	SU+GA	86	84	88
	SU+SA	88	93	79
	SU+BORUTA	89	87	91
LDA	No Feature Selection	86	86	86
	IG+RFE	86	86	86
	IG+GA	82	84	80
	IG+SA	84	91	77
	IG+BORUTA	83	80	86
	GR+RFE	84	84	84
	GR+GA	88	84	91
	GR+SA	80	86	73
	GR+BORUTA	83	82	84
	CFS+RFE	84	82	86
	CFS +GA	89	86	91
	CFS +SA	89	86	91
	CFS+BORUTA	82	84	80
	Kİ-KARE+RFE	85	84	86

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	Kİ-KARE +GA	84	91	77
	Kİ-KARE +SA	76	66	86
	Kİ-KARE +BORUTA	83	80	86
	RELİEF+RFE	83	91	75
	RELİEF +GA	**92**	**89**	**95**
	RELİEF +SA	80	80	80
	RELİEF +BORUTA	85	82	89
	SU+RFE	89	91	86
	SU+GA	83	84	81
	SU+SA	86	93	79
	SU+BORUTA	91	96	86
MLP	No Feature Selection	81	86	75
	IG+RFE	84	75	93
	IG+GA	78	70	86
	IG+SA	83	89	77
	IG+BORUTA	83	82	84
	GR+RFE	81	89	73
	GR+GA	85	91	80
	GR+SA	73	48	98
	GR+BORUTA	81	80	82
	CFS+RFE	81	84	77
	CFS +GA	84	89	80
	CFS +SA	**88**	**75**	**100**
	CFS+BORUTA	88	86	89
	Kİ-KARE+RFE	88	80	95
	Kİ-KARE +GA	83	84	82
	Kİ-KARE +SA	67	50	84
	Kİ-KARE +BORUTA	**82**	**64**	**100**
	RELİEF+RFE	80	89	70
	RELİEF +GA	50	100	0
	RELİEF +SA	53	30	77
	RELİEF +BORUTA	51	11	91
	SU+RFE	52	11	95
	SU+GA	59	22	98
	SU+SA	**88**	**96**	**79**
	SU+BORUTA	84	89	79
EVTREE	No Feature Selection	89	86	91
	IG+RFE	84	80	89
	IG+GA	82	80	84
	IG+SA	80	89	70
	IG+BORUTA	78	68	89
	GR+RFE	75	68	82
	GR+GA	85	89	82
	GR+SA	82	75	89
	GR+BORUTA	83	77	89
	CFS+RFE	84	75	93
	CFS +GA	82	73	91
	CFS +SA	86	77	95
	CFS+BORUTA	85	89	82
	Kİ-KARE+RFE	83	77	89
	Kİ-KARE +GA	82	91	73
	Kİ-KARE +SA	84	70	98
	Kİ-KARE +BORUTA	83	77	89
	RELİEF+RFE	76	86	66
	RELİEF +GA	88	84	91
	RELİEF +SA	75	66	84

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	RELİEF +BORUTA	83	82	84
	SU+RFE	90	87	93
	SU+GA	82	80	84
	SU+SA	82	89	74
	SU+BORUTA	**91**	**89**	**93**
RPART	No Feature Selection	85	91	80
	IG+RFE	80	75	84
	IG+GA	**86**	**93**	**80**
	IG+SA	81	77	84
	IG+BORUTA	82	73	91
	GR+RFE	76	77	75
	GR+GA	85	86	84
	GR+SA	78	80	77
	GR+BORUTA	82	73	91
	CFS+RFE	81	86	75
	CFS +GA	82	68	95
	CFS +SA	82	70	93
	CFS+BORUTA	83	75	91
	Kİ-KARE+RFE	81	86	75
	Kİ-KARE +GA	82	86	77
	Kİ-KARE +SA	78	70	86
	Kİ-KARE +BORUTA	82	73	91
	RELİEF+RFE	81	80	82
	RELİEF +GA	84	77	91
	RELİEF +SA	76	68	84
	RELİEF +BORUTA	82	84	80
	SU+RFE	85	91	79
	SU+GA	84	76	93
	SU+SA	84	96	72
	SU+BORUTA	83	89	77
C5.0	No Feature Selection	89	91	86
	IG+RFE	84	84	84
	IG+GA	88	91	84
	IG+SA	80	86	73
	IG+BORUTA	82	77	86
	GR+RFE	80	75	86
	GR+GA	86	80	93
	GR+SA	84	75	93
	GR+BORUTA	85	84	86
	CFS+RFE	86	80	93
	CFS +GA	83	80	86
	CFS +SA	84	84	84
	CFS+BORUTA	88	91	84
	Kİ-KARE+RFE	88	82	93
	Kİ-KARE +GA	84	91	77
	Kİ-KARE +SA	83	82	84
	Kİ-KARE +BORUTA	82	80	84
	RELİEF+RFE	82	91	73
	RELİEF +GA	**91**	**89**	**93**
	RELİEF +SA	85	80	91
	RELİEF +BORUTA	86	84	89
	SU+RFE	90	91	88
	SU+GA	84	87	81
	SU+SA	86	84	88
	SU+BORUTA	85	82	88
J48	No Feature Selection	84	86	82

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	IG+RFE	82	80	84
	IG+GA	82	80	84
	IG+SA	81	84	77
	IG+BORUTA	84	80	89
	GR+RFE	80	75	84
	GR+GA	84	80	89
	GR+SA	78	75	82
	GR+BORUTA	78	73	84
	CFS+RFE	85	77	93
	CFS +GA	81	84	77
	CFS +SA	82	77	86
	CFS+BORUTA	85	86	84
	Kİ-KARE+RFE	85	77	93
	Kİ-KARE +GA	80	84	75
	Kİ-KARE +SA	80	75	84
	Kİ-KARE +BORUTA	82	77	86
	RELİEF+RFE	81	86	75
	RELİEF +GA	83	84	82
	RELİEF +SA	73	70	75
	RELİEF +BORUTA	82	77	86
	SU+RFE	**91**	**91**	**91**
	SU+GA	82	82	81
	SU+SA	89	93	84
	SU+BORUTA	84	82	86
EARTH	No Feature Selection	85	82	89
	IG+RFE	83	84	82
	IG+GA	89	89	89
	IG+SA	77	86	68
	IG+BORUTA	84	80	89
	GR+RFE	84	82	86
	GR+GA	**91**	**89**	**93**
	GR+SA	84	77	91
	GR+BORUTA	86	80	93
	CFS+RFE	82	77	86
	CFS +GA	82	80	84
	CFS +SA	89	84	93
	CFS+BORUTA	85	89	82
	Kİ-KARE+RFE	80	77	82
	Kİ-KARE +GA	78	89	68
	Kİ-KARE +SA	80	75	86
	Kİ-KARE +BORUTA	84	80	89
	RELİEF+RFE	82	84	80
	RELİEF +GA	90	91	89
	RELİEF +SA	81	80	82
	RELİEF +BORUTA	81	75	86
	SU+RFE	89	89	88
	SU+GA	83	80	86
	SU+SA	83	87	79
	SU+BORUTA	88	84	91
RF	No Feature Selection	80	77	82
	IG+RFE	83	82	84
	IG+GA	89	91	86
	IG+SA	88	91	84
	IG+BORUTA	82	77	86
	GR+RFE	83	77	89
	GR+GA	**92**	**89**	**95**

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	GR+SA	89	84	93
	GR+BORUTA	83	77	89
	CFS+RFE	88	82	93
	CFS +GA	84	82	86
	CFS +SA	89	84	93
	CFS+BORUTA	86	93	80
	Kİ-KARE+RFE	89	84	93
	Kİ-KARE +GA	86	91	82
	Kİ-KARE +SA	84	77	91
	Kİ-KARE +BORUTA	84	80	89
	RELİEF+RFE	86	91	82
	RELİEF +GA	89	84	93
	RELİEF +SA	88	82	93
	RELİEF +BORUTA	82	80	84
	SU+RFE	**91**	**89**	**93**
	SU+GA	85	87	84
	SU+SA	88	89	86
	SU+BORUTA	90	87	93
GBM	No Feature Selection	78	77	80
	IG+RFE	85	84	86
	IG+GA	86	89	84
	IG+SA	82	91	73
	IG+BORUTA	82	77	86
	GR+RFE	84	82	86
	GR+GA	**91**	**86**	**95**
	GR+SA	85	84	86
	GR+BORUTA	83	75	91
	CFS+RFE	88	82	93
	CFS +GA	84	82	86
	CFS +SA	88	82	93
	CFS+BORUTA	86	89	84
	Kİ-KARE+RFE	86	84	89
	Kİ-KARE +GA	82	84	80
	Kİ-KARE +SA	86	84	89
	Kİ-KARE +BORUTA	84	77	91
	RELİEF+RFE	86	91	82
	RELİEF +GA	90	91	89
	RELİEF +SA	80	75	84
	RELİEF +BORUTA	84	80	89
	SU+RFE	88	93	81
	SU+GA	88	87	88
	SU+SA	89	91	86
	SU+BORUTA	86	84	88
XGBTREE	No Feature Selection	77	75	80
	IG+RFE	84	82	86
	IG+GA	86	89	84
	IG+SA	83	86	80
	IG+BORUTA	83	82	84
	GR+RFE	85	82	89
	GR+GA	**92**	**89**	**95**
	GR+SA	84	77	91
	GR+BORUTA	85	82	89
	CFS+RFE	89	82	95
	CFS +GA	80	77	84
	CFS +SA	90	91	89
	CFS+BORUTA	89	91	86

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	Kİ-KARE+RFE	84	82	86
	Kİ-KARE +GA	84	89	80
	Kİ-KARE +SA	84	80	89
	Kİ-KARE +BORUTA	83	82	84
	RELİEF+RFE	82	89	75
	RELİEF +GA	90	86	93
	RELİEF +SA	80	75	84
	RELİEF +BORUTA	84	80	89
	SU+RFE	91	91	91
	SU+GA	88	89	86
	SU+SA	84	84	84
	SU+BORUTA	88	87	88
TREEBAG	No Feature Selection	82	84	80
	IG+RFE	84	86	82
	IG+GA	86	91	82
	IG+SA	82	86	77
	IG+BORUTA	84	80	89
	GR+RFE	82	80	84
	GR+GA	**92**	**89**	**95**
	GR+SA	83	80	86
	GR+BORUTA	83	77	89
	CFS+RFE	88	84	91
	CFS +GA	83	82	84
	CFS +SA	84	82	86
	CFS+BORUTA	89	91	86
	Kİ-KARE+RFE	88	86	89
	Kİ-KARE +GA	83	91	75
	Kİ-KARE +SA	82	77	86
	Kİ-KARE +BORUTA	83	77	89
	RELİEF+RFE	83	86	80
	RELİEF +GA	85	89	82
	RELİEF +SA	84	80	89
	RELİEF +BORUTA	82	80	84
	SU+RFE	89	91	86
	SU+GA	86	84	88
	SU+SA	90	91	88
	SU+BORUTA	86	82	91
ADABOOST	No Feature Selection	80	80	80
	IG+RFE	85	84	86
	IG+GA	89	91	86
	IG+SA	83	89	77
	IG+BORUTA	85	82	89
	GR+RFE	86	80	93
	GR+GA	88	84	91
	GR+SA	82	75	89
	GR+BORUTA	84	80	89
	CFS+RFE	89	86	91
	CFS +GA	80	75	84
	CFS +SA	84	80	89
	CFS+BORUTA	90	91	89
	Kİ-KARE+RFE	89	84	93
	Kİ-KARE +GA	86	91	82
	Kİ-KARE +SA	84	77	91
	Kİ-KARE +BORUTA	85	84	86
	RELİEF+RFE	86	93	80
	RELİEF +GA			

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	RELİEF +SA	**92**	**91**	**93**
	RELİEF +BORUTA	84	80	89
	SU+RFE	91	91	91
	SU+GA	86	84	88
	SU+SA	85	87	84
	SU+BORUTA	89	87	91
GLMBOOST	No Feature Selection	83	82	84
	IG+RFE	89	89	89
	IG+GA	89	91	86
	IG+SA	85	89	82
	IG+BORUTA	82	75	89
	GR+RFE	84	84	84
	GR+GA	89	89	89
	GR+SA	80	84	75
	GR+BORUTA	83	77	89
	CFS+RFE	84	84	84
	CFS +GA	88	89	86
	CFS +SA	89	86	91
	CFS+BORUTA	86	89	84
	Kİ-KARE+RFE	84	84	84
	Kİ-KARE +GA	85	91	80
	Kİ-KARE +SA	72	61	82
	Kİ-KARE +BORUTA	82	75	89
	RELİEF+RFE	85	89	82
	RELİEF +GA	**91**	**89**	**93**
	RELİEF +SA	82	77	86
	RELİEF +BORUTA	85	82	89
	SU+RFE	88	89	86
	SU+GA	82	84	79
	SU+SA	85	89	81
	SU+BORUTA	90	91	88
LOGİTBOOST	No Feature Selection	74	80	68
	IG+RFE	84	77	91
	IG+GA	86	93	80
	IG+SA	78	89	68
	IG+BORUTA	84	80	89
	GR+RFE	80	75	84
	GR+GA	**89**	**89**	**89**
	GR+SA	80	80	80
	GR+BORUTA	83	73	93
	CFS+RFE	84	80	89
	CFS +GA	78	75	82
	CFS +SA	83	77	89
	CFS+BORUTA	85	84	86
	Kİ-KARE+RFE	81	77	84
	Kİ-KARE +GA	81	89	73
	Kİ-KARE +SA	84	77	91
	Kİ-KARE +BORUTA	80	80	80
	RELİEF+RFE	82	82	82
	RELİEF +GA	83	80	86
	RELİEF +SA	85	77	93
	RELİEF +BORUTA	**89**	**89**	**89**
	SU+RFE	86	91	81
	SU+GA	84	80	88
	SU+SA	84	84	84
	SU+BORUTA	78	76	81

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
ROTATİON FOREST	No Feature Selection	82	82	82
	IG+RFE	86	89	84
	IG+GA	88	91	84
	IG+SA	81	91	70
	IG+BORUTA	83	82	84
	GR+RFE	84	82	86
	GR+GA	89	89	89
	GR+SA	86	82	91
	GR+BORUTA	86	82	91
	CFS+RFE	86	82	91
	CFS +GA	84	82	86
	CFS +SA	86	84	89
	CFS+BORUTA	86	91	82
	Kİ-KARE+RFE	88	84	93
	Kİ-KARE +GA	82	89	75
	Kİ-KARE +SA	85	80	91
	Kİ-KARE +BORUTA	85	89	82
	RELİEF+RFE	88	93	82
	RELİEF +GA	89	89	89
	RELİEF +SA	84	82	86
	RELİEF +BORUTA	84	82	86
	SU+RFE	**91**	**87**	**95**
	SU+GA	85	84	86
	SU+SA	85	93	77
	SU+BORUTA	89	87	91

Table 2. Results of Machine Learning Algorithms After Sequential Feature Selection_oversampling

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
GLM	No Feature Selection	82	92	71
	IG+RFE	50	100	0
	IG+GA	78	84	73
	IG+SA	84	83	85
	IG+BORUTA	96	99	11
	GR+RFE	83	84	81
	GR+GA	**97**	**99**	**11**
	GR+SA	**97**	**100**	**11**
	GR+BORUTA	**97**	**99**	**20**
	CFS+RFE	86	88	85
	CFS +GA	77	79	75
	CFS +SA	81	88	73
	CFS+BORUTA	86	88	84
	Kİ-KARE+RFE	86	86	86
	Kİ-KARE +GA	82	81	83
	Kİ-KARE +SA	83	86	80
	Kİ-KARE +BORUTA	87	87	88
	RELİEF+RFE	86	85	88
	RELİEF +GA	83	85	80
	RELİEF +SA	87	86	88
	RELİEF +BORUTA	88	87	90
	SU+RFE	86	86	85
	SU+GA	81	85	77

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	SU+SA	85	86	85
	SU+BORUTA	88	88	88
KNN	No Feature Selection	93	87	100
	IG+RFE	92	84	100
	IG+GA	94	87	100
	IG+SA	95	90	100
	IG+BORUTA	**97**	**100**	**0**
	GR+RFE	95	91	100
	GR+GA	96	99	10
	GR+SA	**97**	**100**	**0**
	GR+BORUTA	**97**	**100**	**0**
	CFS+RFE	96	91	100
	CFS +GA	95	89	100
	CFS +SA	95	90	100
	CFS+BORUTA	96	91	100
	Kİ-KARE+RFE	95	91	100
	Kİ-KARE +GA	94	88	100
	Kİ-KARE +SA	95	91	100
	Kİ-KARE +BORUTA	95	90	100
	RELİEF+RFE	93	87	100
	RELİEF +GA	91	81	100
	RELİEF +SA	96	92	100
	RELİEF +BORUTA	93	87	100
	SU+RFE	96	92	100
	SU+GA	95	90	100
	SU+SA	95	91	100
	SU+BORUTA	96	92	100
NB	No Feature Selection	72	51	94
	IG+RFE			
	IG+GA	71	96	46
	IG+SA	79	95	63
	IG+BORUTA	96	99	11
	GR+RFE	78	68	87
	GR+GA	92	93	59
	GR+SA	93	95	55
	GR+BORUTA	96	98	27
	CFS+RFE	76	96	55
	CFS +GA	61	99	23
	CFS +SA	71	97	45
	CFS+BORUTA	76	96	56
	Kİ-KARE+RFE	75	98	52
	Kİ-KARE +GA	75	90	61
	Kİ-KARE +SA	78	74	82
	Kİ-KARE +BORUTA	78	96	60
	RELİEF+RFE	80	95	64
	RELİEF +GA	81	78	84
	RELİEF +SA	88	90	87
	RELİEF +BORUTA	88	90	85
	SU+RFE	68	97	40
	SU+GA	68	98	37
	SU+SA	83	77	88
	SU+BORUTA	77	98	55
SVMLİ NEAR	No Feature Selection	45	30	61
	IG+RFE			
	IG+GA	79	86	72
	IG+SA	85	83	86

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	IG+BORUTA	96	100	0
	GR+RFE	82	84	80
	GR+GA	97	100	0
	GR+SA	97	100	0
	GR+BORUTA	97	100	0
	CFS+RFE	86	86	86
	CFS +GA	79	81	77
	CFS +SA	81	89	74
	CFS+BORUTA	85	87	84
	Kİ-KARE+RFE	86	86	86
	Kİ-KARE +GA	81	80	82
	Kİ-KARE +SA	84	85	84
	Kİ-KARE +BORUTA	87	86	88
	RELİEF+RFE	87	85	90
	RELİEF +GA	83	85	81
	RELİEF +SA	86	85	88
	RELİEF +BORUTA	89	86	91
	SU+RFE	85	84	86
	SU+GA	81	85	77
	SU+SA	86	86	85
	SU+BORUTA	88	87	89
SVMPOLY	No Feature Selection			
	IG+RFE			
	IG+GA	83	81	84
	IG+SA	89	85	93
	IG+BORUTA	96	100	0
	GR+RFE	89	86	92
	GR+GA	97	100	0
	GR+SA	97	100	0
	GR+BORUTA	97	100	0
	CFS+RFE	88	86	89
	CFS +GA	79	83	75
	CFS +SA	86	82	89
	CFS+BORUTA	87	85	89
	Kİ-KARE+RFE	90	88	92
	Kİ-KARE +GA	83	79	86
	Kİ-KARE +SA	85	83	87
	Kİ-KARE +BORUTA	93	91	96
	RELİEF+RFE	97	94	99
	RELİEF +GA	86	82	90
	RELİEF +SA	90	86	94
	RELİEF +BORUTA	98	96	100
	SU+RFE	91	89	93
	SU+GA	85	82	88
	SU+SA	87	85	90
	SU+BORUTA	95	92	98
SVMRADİAL	No Feature Selection	81	79	84
	IG+RFE			
	IG+GA	87	83	91
	IG+SA	92	88	95
	IG+BORUTA	97	100	0
	GR+RFE	93	92	95
	GR+GA	97	100	0
	GR+SA	97	100	0
	GR+BORUTA	97	100	0
	CFS+RFE	92	90	93

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	CFS +GA	85	85	84
	CFS +SA	90	87	93
	CFS+BORUTA	91	90	92
	Kİ-KARE+RFE	93	91	96
	Kİ-KARE +GA	88	84	92
	Kİ-KARE +SA	90	88	92
	Kİ-KARE +BORUTA	93	91	96
	RELİEF+RFE	92	89	96
	RELİEF +GA	87	85	90
	RELİEF +SA	92	89	95
	RELİEF +BORUTA	94	90	97
	SU+RFE	94	91	97
	SU+GA	89	86	92
	SU+SA	91	88	94
	SU+BORUTA	93	91	94
LDA	No Feature Selection			
	IG+RFE			
	IG+GA	77	82	72
	IG+SA	84	83	85
	IG+BORUTA	95	98	25
	GR+RFE	81	84	78
	GR+GA	96	99	14
	GR+SA	96	99	18
	GR+BORUTA	96	98	25
	CFS+RFE	77	77	76
	CFS +GA	75	75	75
	CFS +SA	78	83	73
	CFS+BORUTA	78	77	79
	Kİ-KARE+RFE	83	84	81
	Kİ-KARE +GA	82	79	84
	Kİ-KARE +SA	80	87	74
	Kİ-KARE +BORUTA	86	86	85
	RELİEF+RFE	82	80	84
	RELİEF +GA	81	85	76
	RELİEF +SA	86	84	87
	RELİEF +BORUTA	87	86	88
	SU+RFE	84	84	83
	SU+GA	80	88	73
	SU+SA	84	86	81
	SU+BORUTA	86	87	85
MLP	No Feature Selection	59	78	40
	IG+RFE			
	IG+GA	77	89	65
	IG+SA	84	83	85
	IG+BORUTA	97	100	0
	GR+RFE	83	74	92
	GR+GA	97	100	0
	GR+SA	97	100	0
	GR+BORUTA	97	100	0
	CFS+RFE	82	89	76
	CFS +GA	78	77	79
	CFS +SA	80	90	70
	CFS+BORUTA	81	86	77
	Kİ-KARE+RFE	83	89	76
	Kİ-KARE +GA	82	80	85
	Kİ-KARE +SA	79	76	83

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	Kİ-KARE +BORUTA	85	89	81
	RELİEF+RFE	51	19	84
	RELİEF +GA	55	62	47
	RELİEF +SA	87	87	88
	RELİEF +BORUTA	51	0	98
	SU+RFE	85	83	88
	SU+GA	78	91	65
	SU+SA	85	88	82
	SU+BORUTA	88	86	91
RPART	No Feature Selection	85	88	83
	IG+RFE			
	IG+GA	81	69	93
	IG+SA	85	88	82
	IG+BORUTA	97	100	10
	GR+RFE	86	88	83
	GR+GA	97	100	0
	GR+SA	97	100	10
	GR+BORUTA	97	100	10
	CFS+RFE	84	80	89
	CFS +GA	83	77	89
	CFS +SA	83	76	90
	CFS+BORUTA	83	80	87
	Kİ-KARE+RFE	86	90	82
	Kİ-KARE +GA	83	75	91
	Kİ-KARE +SA	83	72	95
	Kİ-KARE +BORUTA	85	87	82
	RELİEF+RFE	83	71	94
	RELİEF +GA	84	83	86
	RELİEF +SA	85	86	84
	RELİEF +BORUTA	85	89	81
	SU+RFE	86	92	81
	SU+GA	85	87	83
	SU+SA	85	79	90
	SU+BORUTA	85	92	79
C5.0	No Feature Selection	99	99	100
	IG+RFE			
	IG+GA	99	99	100
	IG+SA	99	98	100
	IG+BORUTA	97	99	11
	GR+RFE	99	98	100
	GR+GA	97	100	0
	GR+SA	97	100	10
	GR+BORUTA	97	100	20
	CFS+RFE	99	98	100
	CFS +GA	99	98	100
	CFS +SA	99	99	100
	CFS+BORUTA	99	98	100
	Kİ-KARE+RFE	99	99	100
	Kİ-KARE +GA	99	99	100
	Kİ-KARE +SA	99	99	100
	Kİ-KARE +BORUTA	99	99	100
	RELİEF+RFE	99	98	100
	RELİEF +GA	99	99	100
	RELİEF +SA	99	98	100
	RELİEF +BORUTA	99	99	100
	SU+RFE	99	99	100

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	SU+GA	99	99	100
	SU+SA	99	99	100
	SU+BORUTA	99	99	100
J48	No Feature Selection	99	97	100
	IG+RFE			
	IG+GA	98	96	100
	IG+SA	99	97	100
	IG+BORUTA	97	100	0
	GR+RFE	99	98	100
	GR+GA	96	99	20
	GR+SA	97	100	10
	GR+BORUTA	97	100	0
	CFS+RFE	98	96	100
	CFS +GA	98	96	100
	CFS +SA	98	96	100
	CFS+BORUTA	98	96	100
	Kİ-KARE+RFE	98	99	100
	Kİ-KARE +GA	98	96	100
	Kİ-KARE +SA	98	96	100
	Kİ-KARE +BORUTA	98	96	100
	RELİEF+RFE	98	97	100
	RELİEF +GA	97	95	100
	RELİEF +SA	98	97	100
	RELİEF +BORUTA	99	97	100
	SU+RFE	99	97	100
	SU+GA	99	97	100
	SU+SA	99	97	100
	SU+BORUTA	99	97	100
EARTH	No Feature Selection	89	88	90
	IG+RFE			
	IG+GA	81	78	85
	IG+SA	87	84	89
	IG+BORUTA	97	99	0
	GR+RFE	88	86	91
	GR+GA	96	99	0
	GR+SA	96	99	11
	GR+BORUTA	96	99	0
	CFS+RFE	87	87	88
	CFS +GA	83	83	82
	CFS +SA	87	87	87
	CFS+BORUTA	86	87	85
	Kİ-KARE+RFE	88	87	89
	Kİ-KARE +GA	82	81	82
	Kİ-KARE +SA	85	81	90
	Kİ-KARE +BORUTA	98	96	100
	RELİEF+RFE	87	85	90
	RELİEF +GA	84	84	84
	RELİEF +SA	86	86	87
	RELİEF +BORUTA	91	90	92
	SU+RFE	89	88	90
	SU+GA	86	86	87
	SU+SA	86	86	87
	SU+BORUTA	90	89	90
RF	No Feature Selection	100	99	100
	IG+RFE	99	99	100
	IG+GA	100	99	100

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	IG+SA	99	99	100
	IG+BORUTA	97	99	18
	GR+RFE	99	98	100
	GR+GA	96	99	14
	GR+SA	97	100	18
	GR+BORUTA	97	99	16
	CFS+RFE	99	99	100
	CFS +GA	99	99	100
	CFS +SA	99	99	100
	CFS+BORUTA	99	99	100
	Kİ-KARE+RFE	99	99	100
	Kİ-KARE +GA	99	99	100
	Kİ-KARE +SA	100	99	100
	Kİ-KARE +BORUTA	99	98	100
	RELİEF+RFE	100	99	100
	RELİEF +GA	100	99	100
	RELİEF +SA	99	99	100
	RELİEF +BORUTA	99	99	100
	SU+RFE	100	99	100
	SU+GA	100	99	100
	SU+SA	100	99	100
	SU+BORUTA	99	99	100
GBM	No Feature Selection	96	92	100
	IG+RFE	79	79	80
	IG+GA	92	86	97
	IG+SA	95	91	99
	IG+BORUTA	97	99	14
	GR+RFE	95	90	99
	GR+GA	96	99	14
	GR+SA	97	99	14
	GR+BORUTA	97	99	20
	CFS+RFE	94	90	98
	CFS +GA	93	90	96
	CFS +SA	93	89	97
	CFS+BORUTA	94	90	98
	Kİ-KARE+RFE	95	91	99
	Kİ-KARE +GA	93	89	98
	Kİ-KARE +SA	94	90	97
	Kİ-KARE +BORUTA	95	92	99
	RELİEF+RFE	95	90	99
	RELİEF +GA	92	88	96
	RELİEF +SA	93	91	96
	RELİEF +BORUTA	95	91	99
	SU+RFE	95	92	99
	SU+GA	95	91	98
	SU+SA	94	91	97
	SU+BORUTA	96	92	99
XGBTREE	No Feature Selection	99	98	100
	IG+RFE	96	92	100
	IG+GA	98	97	100
	IG+SA	98	97	100
	IG+BORUTA	97	99	20
	GR+RFE	99	97	100
	GR+GA	97	99	18
	GR+SA	97	99	14
	GR+BORUTA	97	99	18

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	CFS+RFE	98	97	100
	CFS +GA	98	96	100
	CFS +SA	98	97	100
	CFS+BORUTA	98	97	100
	Kİ-KARE+RFE	99	97	100
	Kİ-KARE +GA	98	96	100
	Kİ-KARE +SA	98	97	100
	Kİ-KARE +BORUTA	99	97	100
	RELİEF+RFE	99	98	100
	RELİEF +GA	98	96	100
	RELİEF +SA	98	97	100
	RELİEF +BORUTA	99	98	100
	SU+RFE	99	98	100
	SU+GA	99	98	100
	SU+SA	99	98	100
	SU+BORUTA	99	98	100
TREEBAG	No Feature Selection	99	97	100
	IG+RFE	99	98	100
	IG+GA	99	97	100
	IG+SA	99	98	100
	IG+BORUTA	97	99	11
	GR+RFE	99	98	100
	GR+GA	97	99	20
	GR+SA	96	99	11
	GR+BORUTA	96	99	20
	CFS+RFE	99	97	100
	CFS +GA	99	97	100
	CFS +SA	99	98	100
	CFS+BORUTA	99	98	100
	Kİ-KARE+RFE	99	98	100
	Kİ-KARE +GA	99	97	100
	Kİ-KARE +SA	99	98	100
	Kİ-KARE +BORUTA	99	97	100
	RELİEF+RFE	99	98	100
	RELİEF +GA	99	98	100
	RELİEF +SA	99	97	100
	RELİEF +BORUTA	99	97	100
	SU+RFE	99	98	100
	SU+GA	99	98	100
	SU+SA	99	99	100
	SU+BORUTA	98	97	100
ADABOOST	No Feature Selection	99	99	100
	IG+RFE	99	99	100
	IG+GA	99	99	100
	IG+SA	99	99	100
	IG+BORUTA	97	99	11
	GR+RFE	99	99	100
	GR+GA	97	99	11
	GR+SA	97	99	11
	GR+BORUTA	97	99	16
	CFS+RFE	99	99	100
	CFS +GA	99	99	100
	CFS +SA	99	99	100
	CFS+BORUTA	99	99	100
	Kİ-KARE+RFE	99	99	100
	Kİ-KARE +GA	99	99	100

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	Kİ-KARE +SA	99	99	100
	Kİ-KARE +BORUTA	99	99	100
	RELİEF+RFE	99	99	100
	RELİEF +GA	99	99	100
	RELİEF +SA	99	99	100
	RELİEF +BORUTA	99	99	100
	SU+RFE	100	100	100
	SU+GA	99	99	100
	SU+SA	100	100	100
	SU+BORUTA	99	99	100
GLMBOOST	No Feature Selection	87	86	89
	IG+RFE	50	99	0
	IG+GA	79	85	72
	IG+SA	83	85	81
	IG+BORUTA	97	99	0
	GR+RFE	82	85	80
	GR+GA	97	99	0
	GR+SA	97	99	0
	GR+BORUTA	97	99	0
	CFS+RFE	77	77	77
	CFS +GA	75	75	75
	CFS +SA	79	79	79
	CFS+BORUTA	77	76	79
	Kİ-KARE+RFE	84	83	85
	Kİ-KARE +GA	82	81	83
	Kİ-KARE +SA	81	85	77
	Kİ-KARE +BORUTA	86	87	86
	RELİEF+RFE	83	83	83
	RELİEF +GA	81	84	77
	RELİEF +SA	85	86	85
	RELİEF +BORUTA	87	86	87
	SU+RFE	85	84	86
	SU+GA	81	86	76
	SU+SA	85	86	85
	SU+BORUTA	87	88	86
LOGİTBOOST	No Feature Selection	93	89	97
	IG+RFE	69	76	63
	IG+GA	87	81	93
	IG+SA	90	88	92
	IG+BORUTA	96	99	32
	GR+RFE	90	88	92
	GR+GA	96	99	18
	GR+SA	96	98	23
	GR+BORUTA	96	99	16
	CFS+RFE	90	87	93
	CFS +GA	87	83	90
	CFS +SA	89	82	97
	CFS+BORUTA	89	88	90
	Kİ-KARE+RFE	91	88	94
	Kİ-KARE +GA	88	88	88
	Kİ-KARE +SA	89	87	90
	Kİ-KARE +BORUTA	91	88	95
	RELİEF+RFE	89	89	89
	RELİEF +GA	87	79	94
	RELİEF +SA	89	86	91
	RELİEF +BORUTA	91	89	93

ALGORITHM	ATTRIBUTE SELECTION METHOD	Acc (%)	Sen (%)	Spe (%)
	SU+RFE	91	89	94
	SU+GA	88	86	90
	SU+SA	90	88	92
	SU+BORUTA	92	91	93
ROTATİON FOREST	No Feature Selection	93	89	97
	IG+RFE	68	77	58
	IG+GA	85	77	93
	IG+SA	89	85	93
	IG+BORUTA	97	99	11
	GR+RFE	90	86	94
	GR+GA	97	99	11
	GR+SA	97	99	16
	GR+BORUTA	97	99	20
	CFS+RFE	87	88	86
	CFS +GA	86	87	84
	CFS +SA	87	84	90
	CFS+BORUTA	88	87	89
	Kİ-KARE+RFE	91	88	94
	Kİ-KARE +GA	89	83	95
	Kİ-KARE +SA	88	87	89
	Kİ-KARE +BORUTA	90	89	91
	RELİEF+RFE	91	88	93
	RELİEF +GA	86	80	92
	RELİEF +SA	88	87	88
	RELİEF +BORUTA	90	88	92
	SU+RFE	91	89	93
	SU+GA	88	86	90
	SU+SA	89	85	94
	SU+BORUTA	91	89	92