		seed=0	seed=1	seed=2	seed=3	seed=4
abalone	preprocessors	_	_	_	attributeSelection.	attributeSelection.
	preprocessors				Ranker	BestFirst
	predictor	trees.LMT	bayes.BayesNet	functions. MultilayerPerceptron	functions. SimpleLogistic	trees.LMT
	accuracy	25.62	26.02	26.18	25.62	25.94
amazon	preprocessors	-	-	-	-	attributeSelection. BestFirst
	predictor	bayes.NaiveBayes	-	rules.PART	-	trees.J48
	accuracy	62.22	-	34.67	-	21.78
	preprocessors	attributeSelection. BestFirst	-	attributeSelection. BestFirst	-	-
car	predictor	functions.SMO	trees.J48	functions.SMO	trees.LMT	functions.SMO
	accuracy	100	96.14	100	97.68	97.68
convex	preprocessors	-	-	$\begin{array}{l} \text{attribute.Center} \rightarrow \\ \text{attribute.PrincipalComponents} \\ \rightarrow \text{instance.PeriodicSampling} \end{array}$	-	-
	predictor	trees.J48	-	meta. ClassificationViaRegression	-	-
	accuracy	62.44	-	50.29	-	-
dexter	preprocessors	-	-	-	-	-
	predictor	bayes. NaiveBayesMultinomial	-	-	rules.Jrip	-
	accuracy	89.44	-	-	86.67	-
	preprocessors	-	-	-	-	-
dorothea	predictor	rules.OneR	-	-	-	-
	accuracy	94.49	-	-	-	-
	preprocessors	-	-	-	-	attributeSelection. Ranker
gcredit	predictor	bayes.NaiveBayes	functions. MultilayerPerceptron	functions.SMO	bayes.NaiveBayes	functions. Logistic
	accuracy	69.33	50.05	70.33	69.33	73.67
	preprocessors	attributeSelection.Ranker	-	-	-	-
gisette	predictor	trees.REPTree	-	-	-	-
	accuracy	93.52	-	-	-	-
	preprocessors	-	-	-	-	-
shuttle	predictor	trees.REPTree	-	trees.RandomTree	-	trees.REPTree
	accuracy	99.99	-	99.98	-	99.92
	preprocessors	-	-	-	-	-
wineqw	predictor	lazy.Kstar	functions.SMO	-	lazy.Kstar	trees.J48
-	accuracy	64.81	59.7	-	64.33	59.09

Table 4: Pipeline structure and accuracy in percentage generated by AutoWeka for MCPS using different datasets and seed numbers

		seed=0	seed=1	seed=2	seed=3	seed=4
abalone	preprocessors	-	-	-	-	-
	predictor	-	-	-	-	-
	accuracy	-	-	-	-	-
	preprocessors	-	-	-	-	-
amazon	predictor	-	-	-	-	-
	accuracy	-	-	-	-	-
car	preprocessors	-	-	-	-	-
	predictor	-	-	-	-	-
	accuracy	-	-	-	-	-
	preprocessors	-	-	-	-	-
convex	predictor	RandomForest	RandomForest	RandomForest	XGBoost	GradientBoosting
	accuracy	74.14	73.78	74.97	78.89	78.23
	preprocessors	-	-	-	-	-
\mathbf{dexter}	predictor	-	MultinomialNB	MultinomialNB	MultinomialNB	MultinomialNB
	accuracy	-	92.78	93.33	93.33	93.33
	preprocessors	-	-		-	-
dorothea	predictor	-	RandomForest	DecisionTree	-	RandomForest
	accuracy	-	95.36	94.78	-	95.36
	preprocessors	-	-	-	-	-
${f gcredit}$	predictor	-	-	-	-	-
	accuracy	-	-	-	-	-
	preprocessors	-	-	-	-	-
gisette	predictor	LogisticRegression	-	-	-	LogisticRegression
	accuracy	97.29	-	-	-	97.19
	preprocessors	ZeroCount	-	-	SelectPercentile	-
$\mathbf{shuttle}$	predictor	XGBoost	ExtraTrees	RandomForest	RandomForest	GradientBoosting
	accuracy	99.99	99.99	99.99	99.99	99.99
wineqw	preprocessors	PolynomialFeatures		StackingEstimator	StackingEstimator	PolynomialFeatures
wineqw	predictor	ExtraTrees	RandomForest	ExtraTrees	GradientBoosting	ExtraTrees
	accuracy	64.26	58.13	62.70	58.00	58.07

Table 5: Pipeline structure and accuracy in percentage generated by TPOT using different datasets and seed numbers

		seed=0	seed=1	seed=2	seed=3	seed=4
abalone	-	-	-	-	-	-
amazon	-	-	-	-	-	-
car	-	-	-	-	-	-
convex	preprocessors	OneHotEncoding	OneHotEncoding	OneHotEncoding	OneHotEncoding	OneHotEncoding
		\rightarrow Median	\rightarrow Median	\rightarrow Median	\rightarrow Median	\rightarrow Median
		\rightarrow Feature	\rightarrow Feature	\rightarrow Feature	\rightarrow Feature	\rightarrow Feature
		Agglomeration	Agglomeration	Agglomeration	Agglomeration	Agglomeration
		\rightarrow Quantile	\rightarrow Quantile	\rightarrow Quantile	\rightarrow Quantile	\rightarrow Quantile
		Transformer	Transformer	Transformer	Transformer	Transformer
	predictor	GradientBoosting	GradientBoosting	GradientBoosting	GradientBoosting	GradientBoosting
	accuracy	83.36	81.84	83.42	82.73	82.65
	preprocessors	BalancingWeighting	BalancingWeighting	BalancingWeighting	BalancingWeighting	BalancingWeighting
		\rightarrow OneHotEncoding	\rightarrow OneHotEncoding	\rightarrow OneHotEncoding	→OneHotEncoding	→OneHotEncoding
dexter		\rightarrow Mean	\rightarrow Mean	\rightarrow Mean	\rightarrow Mean	\rightarrow Mean
dexter		\rightarrow LinearSvcPrep	\rightarrow Normalize	\rightarrow LinearSvcPrep	\rightarrow Normalize	\rightarrow Normalize
	predictor	RandomForest	SvmSvc	RandomForest	SvmSvc	SvmSvc
	accuracy	93.33	96.11	93.88	95.56	96.11
dorothea	-	-	-	-	-	-
${f gcredit}$	-	-	-	-	-	-
	preprocessors	OneHotEncoding	Imputation Most Frequent	OneHotEncoding	OneHotEncoding	OneHotEncoding
					. 3. 1	1 3.5
	preprocessors	\rightarrow Mean \rightarrow SelectRates	\rightarrow SelectPercentile	\rightarrow Mean	\rightarrow Mean	\rightarrow Mean
gisette		\rightarrow RobustScaler	\rightarrow Standardize	\rightarrow Standardize	\rightarrow Standardize	\rightarrow Standardize
gisette	preprocessors predictor	\rightarrow RobustScaler GradientBoosting	\rightarrow Standardize GradientBoosting	\rightarrow Standardize RandomForest	\rightarrow Standardize RandomForest	\rightarrow Standardize RandomForest
gisette		→RobustScaler GradientBoosting 97.9	→Standardize GradientBoosting 97.76	\rightarrow Standardize RandomForest 97.57	→Standardize RandomForest 97.48	→Standardize RandomForest 97.1
gisette	predictor	→RobustScaler GradientBoosting 97.9 BalancingWeighting	→Standardize GradientBoosting 97.76 BalancingWeighting	→Standardize RandomForest 97.57 BalancingWeighting	→Standardize RandomForest 97.48 BalancingWeighting	→Standardize RandomForest 97.1 BalancingWeighting
gisette	predictor accuracy	→RobustScaler GradientBoosting 97.9 BalancingWeighting →OneHotEncoding	→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding	→Standardize RandomForest 97.57 BalancingWeighting →OneHotEncoding	→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding	→Standardize RandomForest 97.1 BalancingWeighting →OneHotEncoding
-	predictor		→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding →Mean	→Standardize RandomForest 97.57 BalancingWeighting →OneHotEncoding →Mean	→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding →Mean	
gisette	predictor accuracy preprocessors		→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding →Mean →Polynomial		→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding →Mean →Standardize	
-	predictor accuracy		→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting	→Standardize RandomForest 97.57 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting	→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding →Mean →Standardize GradientBoosting	→Standardize RandomForest 97.1 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting
-	predictor accuracy preprocessors		→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.98	→Standardize RandomForest 97.57 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99	→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding →Mean →Standardize GradientBoosting 99.99	→Standardize RandomForest 97.1 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99
-	predictor accuracy preprocessors	→RobustScaler GradientBoosting 97.9 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting	→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.98 BalancingWeighting	→Standardize RandomForest 97.57 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting	→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding →Mean →Standardize GradientBoosting 99.99 BalancingWeighting	→Standardize RandomForest 97.1 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting
-	predictor accuracy preprocessors		→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.98 BalancingWeighting →MostFreqPoly	→Standardize RandomForest 97.57 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting →MostFreqPoly	→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding →Mean →Standardize GradientBoosting 99.99 BalancingWeighting →MostFreqPoly	→Standardize RandomForest 97.1 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting →MostFreqPoly
-	predictor accuracy preprocessors predictor accuracy preprocessors		→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.98 BalancingWeighting →MostFreqPoly →RobustScaler	→Standardize RandomForest 97.57 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting →MostFreqPoly →RobustScaler	→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding →Mean →Standardize GradientBoosting 99.99 BalancingWeighting →MostFreqPoly →RobustScaler	→Standardize RandomForest 97.1 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting →MostFreqPoly →RobustScaler
shuttle	predictor accuracy preprocessors predictor accuracy		→Standardize GradientBoosting 97.76 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.98 BalancingWeighting →MostFreqPoly	→Standardize RandomForest 97.57 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting →MostFreqPoly	→Standardize RandomForest 97.48 BalancingWeighting →OneHotEncoding →Mean →Standardize GradientBoosting 99.99 BalancingWeighting →MostFreqPoly	→Standardize RandomForest 97.1 BalancingWeighting →OneHotEncoding →Mean →Polynomial GradientBoosting 99.99 BalancingWeighting →MostFreqPoly

Table 6: Pipeline structure and accuracy in percentage generated by Auto-sklearn using different datasets and seed numbers