

## Feature Descriptor: LTP

### 1. Feature Selection: CFS

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.589	0.603	0.603	0.6	0.603	0.602	0
J48 binary tree	0.728	0.74	0.74	0.736	0.742	0.739	0
AODE	0.778	0.733	0.733	0.736	0.737	0.733	0
Bayes network	0.794	0.756	0.756	0.76	0.761	0.755	0
Naïve bay	0.794	0.748	0.748	0.763	0.754	0.748	0
SVM	0.625	0.634	0.634	0.617	0.653	0.615	0
Logistic	0.669	0.595	0.595	0.596	0.596	0.596	0.03
SMO	0.724	0.725	0.725	0.723	0.725	0.725	0.03
Muti layer	0.795	0.725	0.725	0.72	0.727	0.724	9.2

### 2. Feature Selection: Chi-Square

K=10

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.583	0.58	0.58	0.583	0.583	0.58	0
AODE	0.653	0.603	0.603	0.698	0.608	0.602	0.05
Bayes network	0.625	0.588	0.588	0.595	0.595	0.595	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.481	0.269	0.355	0.12
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	7.62
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.05
Muti layer							

K=20

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.583	0.58	0.58	0.583	0.583	0.58	0
AODE	0.653	0.603	0.603	0.698	0.608	0.602	0.05
Bayes network	0.625	0.588	0.588	0.595	0.595	0.595	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.481	0.269	0.355	0.12
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	7.62
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.05
Muti layer							

K=30

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.583	0.58	0.58	0.583	0.583	0.58	0
AODE	0.653	0.603	0.603	0.698	0.608	0.602	0.05
Bayes network	0.625	0.588	0.588	0.595	0.595	0.595	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.481	0.269	0.355	0.12
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	7.62
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.05
Muti layer							

K=40

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.583	0.58	0.58	0.583	0.583	0.58	0
AODE	0.653	0.603	0.603	0.698	0.608	0.602	0.05
Bayes network	0.625	0.588	0.588	0.595	0.595	0.595	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.481	0.269	0.355	0.12
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	7.62
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.05
Muti layer							

K=50

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.583	0.58	0.58	0.583	0.583	0.58	0
AODE	0.653	0.603	0.603	0.698	0.608	0.602	0.05
Bayes network	0.625	0.588	0.588	0.595	0.595	0.595	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.481	0.269	0.355	0.12
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	7.62
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.05
Muti layer							

K=60

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.583	0.58	0.58	0.583	0.583	0.58	0
AODE	0.653	0.603	0.603	0.698	0.608	0.602	0.05
Bayes network	0.625	0.588	0.588	0.595	0.595	0.595	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.481	0.269	0.355	0.12
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	7.62
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.05
Muti layer							

### 3. Feature Selection: Gain Ratio

K=10

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.618	0.611	0.611	0.614	0.614	0.61	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.588	0.588	0.588	0.588	0.588	5.91
SMO	0.686	0.687	0.687	0.686	0.687	0.687	0.04
Muti layer							

K=20

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.618	0.611	0.611	0.614	0.614	0.61	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.588	0.588	0.588	0.588	0.588	5.91
SMO	0.686	0.687	0.687	0.686	0.687	0.687	0.04
Muti layer							

K=30

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.618	0.611	0.611	0.614	0.614	0.61	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.588	0.588	0.588	0.588	0.588	5.91
SMO	0.686	0.687	0.687	0.686	0.687	0.687	0.04
Muti layer							

K=40

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.618	0.611	0.611	0.614	0.614	0.61	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.588	0.588	0.588	0.588	0.588	5.91
SMO	0.686	0.687	0.687	0.686	0.687	0.687	0.04
Muti layer							

K=50

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.618	0.611	0.611	0.614	0.614	0.61	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.588	0.588	0.588	0.588	0.588	5.91
SMO	0.686	0.687	0.687	0.686	0.687	0.687	0.04
Muti layer							

K=60

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.618	0.611	0.611	0.614	0.614	0.61	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.588	0.588	0.588	0.588	0.588	5.57
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

#### 4. Feature Selection: Information Gain

K=10

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.613	0.595	0.595	0.597	0.597	0.595	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	6.17
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=20

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.613	0.595	0.595	0.597	0.597	0.595	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	6.17
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=30

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.613	0.595	0.595	0.597	0.597	0.595	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	6.17
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=40

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.613	0.595	0.595	0.597	0.597	0.595	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	6.17
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=50

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.613	0.595	0.595	0.597	0.597	0.595	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	6.17
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=60

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
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J48	0.482	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.613	0.595	0.595	0.597	0.597	0.595	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.635	0.595	0.595	0.596	0.596	0.596	6.17
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

## 5. Feature Selection: Relief

K=10

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.488	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.571	0.588	0.588	0.59	0.59	0.588	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.637	0.588	0.588	0.588	0.588	0.588	6.8
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=20

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.488	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.571	0.588	0.588	0.59	0.59	0.588	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.637	0.588	0.588	0.588	0.588	0.588	6.8
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=30

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.488	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.571	0.588	0.588	0.59	0.59	0.588	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.637	0.588	0.588	0.588	0.588	0.588	6.8
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=40

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.488	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.571	0.588	0.588	0.59	0.59	0.588	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.637	0.588	0.588	0.588	0.588	0.588	6.8
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=50

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
J48	0.488	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.571	0.588	0.588	0.59	0.59	0.588	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.637	0.588	0.588	0.588	0.588	0.588	6.8
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							

K=60

Algorithm	AUC	AC	SN	SP	PR	FM	TIME
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J48	0.488	0.481	0.481	0.483	0.483	0.481	0
J48 binary tree	0.571	0.588	0.588	0.59	0.59	0.588	0
AODE	0.653	0.603	0.603	0.608	0.608	0.602	0
Bayes network	0.625	0.588	0.588	0.595	0.595	0.585	0
Naïve bay	0.63	0.588	0.588	0.595	0.595	0.585	0
SVM	0.5	0.519	0.519	0.491	0.269	0.355	0.05
Logistic	0.637	0.588	0.588	0.588	0.588	0.588	6.8
SMO	0.686	0.687	0.687	0.684	0.687	0.687	0.04
Muti layer							