**Glass0:** Results are **Accuracy** based, Each dataset has 2 rows, 1st row contains range of purity for which highest accuracy was achieved and 2nd row provides accuracy score for Completely pure rule based results or as highly pure rule that was possible to generate.

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| --- | --- | --- | --- | --- |
| dataset | Decision Rule purity range  During Oversampling | Without oversampling  (NON SMOTE) | With  Oversampling (NON SMOTE) | SMOTE balanced data |
| glass0-5-1tra.dat | 0.6-0.66 | 0.81395 | 0.860465 | 0.7906976744186046 |
| glass0-5-1tra.dat | 1.0 (highest possible purity) | 0.81395 | 0.81395 | 0.7906976744186046 |
| glass0-5-2tra.dat | .71-1.0 | 0.81395 | 0.860465 | 0.7674418604651163 |
| glass0-5-2tra.dat | 1.0(highest possible purity) | 0.81395 | 0.860465 | 0.7674418604651163 |
| glass0-5-3tra.dat | 0.6-1.0 | 0.8372093 | 0.860465 | 0.7906976744186046 |
| glass0-5-3tra.dat | 1.0(highest possible purity) | 0.8372093 | 0.860465 | 0.7906976744186046 |
| glass0-5-4tra.dat | 0.72-0.75 | 0.6976744186046512 | 0.7674418604651163 | 0.7441860465116279 |
| glass0-5-4tra.dat | 0.75(highest possible purity) | 0.6976744186046512 | 0.7674418604651163 | 0.7441860465116279 |
| glass0-5-5tra.dat | 0.91-1.0 | 0.7619047619047619 | 0.8571428571428571 | 0.7619047619047619 |
| glass0-5-5tra.dat | 1.0(highest possible purity) | 0.7619047619047619 | 0.8571428571428571 | 0.7619047619047619 |

Oversampling accuracy(avg.) = 0.84119592

Balanced SMOTE(avg.) =0.771105444

0.84119592 0.771105444

**Glass2:** Results are **Accuracy** based, Each dataset has 2 rows, 1st row contains range of purity for which highest accuracy was achieved and 2nd row provides accuracy score for Completely pure rule based results or as highly pure rule that was possible to generate.

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| dataset | Decision Rule purity range  During Oversampling | Without oversampling  (NON SMOTE) | With  Oversampling (NON SMOTE) | SMOTE balanced data |
| Glass2-5-2tra.dat | 0.0-0.85 | 0.88372 | 0.9069 |  |
| Glass2-5-12tra.dat | 0.85 (highest possible purity) | 0.88372 | 0.9069 |  |
| Glass2-5-1tra.dat |  |  |  |  |
| Glass2-5-1tra.dat |  |  |  |  |
| Glass2-5-3tra.dat | 0.6-1.0 | 0.93023 | 0.93023 |  |
| Glass2-5-3tra.dat |  | 0.93023 | 0.93023 |  |
| Glass2-5-4tra.dat | 0.72-0.75 | 0.6976744186046512 | 0.7674418604651163 |  |
| Glass2-5-4tra.dat | 0.75(highest possible purity) | 0.6976744186046512 | 0.7674418604651163 |  |
| Glass2-5-5tra.dat | 0.91-1.0 | 0.7619047619047619 | 0.8571428571428571 |  |
| Glass2-5-5tra.dat | 1.0(highest possible purity) | 0.7619047619047619 | 0.8571428571428571 |  |

Oversampling accuracy(avg.) = 0.84119592

Balanced SMOTE(avg.) =0.771105444

0.84119592 0.771105444

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| dataset | Decision Rule purity range during oversampling | Without oversampling  (NON SMOTE) | With  Oversampling (NON SMOTE) | SMOTE balanced data |
| glass-0-1-6\_vs\_2-5-1tra.dat | 0.0-0.11 | 0.89743589 | 0.8205128 |  |
| glass-0-1-6\_vs\_2-5-1tra.dat | 0.11 | 0.89743589 | 0.8205128 |  |
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**Haberman:**

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| dataset | Decision Rule purity range during oversampling | Without oversampling  (NON SMOTE) | With  Oversampling (NON SMOTE) | SMOTE balanced data |
| haberman-5-2tra.dat | 0.6-0.75 | 0.67213 | **0.7049180** |  |
| haberman-5-2tst.dat | 0.11 | 0.67213 | **0.7049180** |  |
| haberman-5-3tra.dat | 0.0-0.45 | 0.73770 | 0.6721 |  |
| haberman-5-3tst.dat | 0.45 | 0.73770 | 0.6721 |  |
| haberman-5-4tra.dat | 0.26-0.69 | 0.8032 | 0.7377 |  |
| haberman-5-4tst.dat | 0.69 | 0.8032 | 0.7377 |  |
| haberman-5-1tra.dat | 0.6-1.0 | 0.7903 | 0.79032 |  |
| haberman-5-1tst.dat | 1.0 | 0.7903 | 0.79032 |  |

**Pima:**

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| dataset | Decision Rule purity range during oversampling | Without oversampling  (NON SMOTE) | With  Oversampling (NON SMOTE) | SMOTE balanced data |
| pima-5-1tra.dat | 0.68-0.78 | 0.75974 | 0**.7662337** |  |
| pima-5-1tst.dat | 1.0 | 0.75974 | 0.69480 |  |
| pima-5-2tra.dat | 0.6-0.9 | 0.740259 | 0.740259 |  |
| pima-5-2tst.dat | 1.0 | 0.740259 | 0.6883 |  |
| pima-5-3tra.dat | 0.6-0.85 | 0.74675 | 0.720779 |  |
| pima-5-3tst.dat | 0.85 | 0.74675 | 0.720779 |  |
| pima-5-4tra.dat | 0.9-1.0 | 0.74509 | 0.71895 |  |
| pima-5-4tst.dat | 1.0 | 0.74509 | 0.71895 |  |
| pima-5-5tra.dat | 0.6-0.73 | 0.74509 | 0.74509 |  |
| pima-5-5tst.dat | 0.73 | 0.74509 | 0.74509 |  |

Cleveland:

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| dataset | Decision Rule purity range during oversampling | Without oversampling  (NON SMOTE) | With  Oversampling (NON SMOTE) | SMOTE balanced data |
| cleveland-0\_vs\_4-5-1tra.dat | 0.35-1.0 | 0.8857 | **0.914285** |  |
| cleveland-0\_vs\_4-5-1tst.dat | 1.0 | 0.8857 | **0.914285** |  |
| cleveland-0\_vs\_4-5-2tra.dat | 0.0-0.60 | 0.8888 | **0.91666** |  |
| cleveland-0\_vs\_4-5-2tst.dat | 1.00 | 0.8888 | 0.8888 |  |
| cleveland-0\_vs\_4-5-3tra.dat | 0.0-1.0 | 0.911764 | 0.911764 |  |
| cleveland-0\_vs\_4-5-3tst.dat | 1.0 | 0.911764 | 0.911764 |  |
| cleveland-0\_vs\_4-5-4tra.dat | 0.51-1.0 | 0.970588 | 0.970588 |  |
| cleveland-0\_vs\_4-5-4tst.dat | 1.0 | 0.970588 | 0.970588 |  |
| cleveland-0\_vs\_4-5-5tra.dat | 0.0-0.8 | 0.911764 | 0.911764 |  |
| cleveland-0\_vs\_4-5-5tst.dat | 0.8 | 0.911764 | 0.911764 |  |

Pima:

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| dataset | Decision Rule purity range during oversampling | Without oversampling  (NON SMOTE) | With  Oversampling (NON SMOTE) | SMOTE balanced data |
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Pima:

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| --- | --- | --- | --- | --- |
| dataset | Decision Rule purity range during oversampling | Without oversampling  (NON SMOTE) | With  Oversampling (NON SMOTE) | SMOTE balanced data |
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