**Target 3 – Origin Summary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dataset** | **LUNAR** | **K = 3** | **K = 6** | **K = 9** |
| **HRSS** | **92.17** | **91.06** | **91.76** | **92.06** |
| **MI-F** | **84.37** | **83.89** | **83.93** | **83.13** |
| **MI-V** | **96.73** | **97.98** | **99.30** | **99.66** |
| **OPTDIGITS** | **99.76** | **99.99** | **99.94** | **99.71** |
| **PENDIGITS** | **99.81** | **100.00** | **100.00** | **97.76** |
| **SATELLITE** | **85.35** | **95.77** | **97.47** | **96.44** |
| **SHUTTLE** | **99.97** | **99.99** | **99.81** | **99.98** |
| **THYROID** | **85.44** | **88.97** | **90.56** | **88.75** |

**Target 3 – Target1 Summary**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Target1** | **P = 10** | | | | **P = 30** | | | | **P = 50** | | | |
| **Dataset** |  | **K = 3** | **K = 6** | **K = 9** |  | **K = 3** | **K = 6** | **K = 9** |  | **K = 3** | **K = 6** | **K = 9** |
| **HRSS** | **87.13** | **92.00** | **93.69** | **93.94** | **78.33** | **83.78** | **86.85** | **88.82** | **70.10** | **81.26** | **83.23** | **83.45** |
| **MI-F** | **50.34** | **50.69** | **51.79** | **50.01** | **46.54** | **44.95** | **46.53** | **44.89** | **47.19** | **43.78** | **41.90** | **41.27** |
| **MI-V** | **77.15** | **77.66** | **85.70** | **85.38** | **64.10** | **67.18** | **70.72** | **71.83** | **59.85** | **64.64** | **66.68** | **67.43** |
| **OPTDIGITS** | **94.57** | **99.63** | **99.54** | **99.03** | **68.44** | **66.37** | **80.97** | **86.43** | **50.49** | **56.78** | **67.35** | **68.79** |
| **PENDIGITS** | **99.56** | **99.95** | **99.94** | **99.86** | **53.95** | **76.11** | **90.73** | **92.34** | **25.20** | **46.19** | **78.16** | **73.54** |
| **SATELLITE** | **51.05** | **68.73** | **76.33** | **73.95** | **45.64** | **63.48** | **67.14** | **64.34** | **49.94** | **57.39** | **60.39** | **61.83.** |
| **SHUTTLE** | **39.34** | **96.93** | **98.49** | **99.53** | **90.22** | **86.95** | **87.14** | **93.44** | **86.11** | **86.13** | **80.18** | **89.51** |
| **THYROID** | **71.36** | **87.98** | **85.19** | **91.02** | **70.09** | **95.25** | **86.12** | **87.08** | **66.38** | **79.39** | **85.73** | **89.15** |

**Target 3 – Target2 Summary**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Target1** | **P = 50** | | | | **P = 70** | | | | **P = 90** | | | |
| **Dataset** |  | **K = 3** | **K = 6** | **K = 9** |  | **K = 3** | **K = 6** | **K = 9** |  | **K = 3** | **K = 6** | **K = 9** |
| **HRSS** | **82.49** | **80.40** | **79.75** | **79.16** | **86.66** | **85.75** | **83.53** | **85.90** | **90.39** | **90.09** | **89.93** | **83.83** |
| **MI-F** | **84.11** | **83.07** | **79.38** | **80.59** | **82.22** | **79.07** | **81.49** | **80.70** | **84.16** | **81.89** | **81.87** | **83.84** |
| **MI-V** | **95.33** | **98.86** | **99.25** | **98.37** | **95.61** | **99.07** | **98.64** | **99.53** | **96.41** | **98.09** | **99.33** | **99.42** |
| **OPTDIGITS** | **99.39** | **99.97** | **99.96** | **99.74** | **99.44** | **99.79** | **99.37** | **99.95** | **99.44** | **99.71** | **100.00** | **99.97** |
| **PENDIGITS** | **99.84** | **99.86** | **99.90** | **100.00** | **99.84** | **99.99** | **99.40** | **99.89** | **99.83** | **99.96** | **100.00** | **99.99** |
| **SATELLITE** | **84.14** | **93.98** | **95.19** | **96.59** | **84.61** | **97.26** | **94.54** | **97.09** | **86.01** | **96.90** | **95.13** | **95.39** |
| **SHUTTLE** | **99.86** | **99.99** | **99.83** | **99.98** | **99.97** | **99.97** | **99.98** | **99.95** | **99.94** | **99.97** | **99.98** | **99.99** |
| **THYROID** | **87.93** | **91.26** | **92.43** | **91.87** | **85.23** | **87.95** | **83.06** | **86.03** | **83.68** | **88.89** | **85.51** | **92.97** |

**Target 3 – Origin**

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| **Dataset: HRSS**  **91.90 92.71 92.24 93.04 85.40 Score: 91.06**  **Dataset: MI-F**  **83.30 83.65 81.19 87.43 83.90 Score: 83.89**  **Dataset: MI-V**  **98.15 97.33 98.69 96.91 98.80 Score: 97.98**  **Dataset: OPTDIGITS**  **99.97 100.00 100.00 99.98 100.00 Score: 99.99**  **Dataset: PENDIGITS**  **100.00 100.00 100.00 100.00 100.00 Score: 100.00**  **Dataset: SATELLITE**  **97.48 94.92 93.31 95.97 97.17 Score: 95.77**  **Dataset: SHUTTLE**  **99.98 100.00 99.99 99.99 99.99 Score: 99.99**  **Dataset: THYROID**  **89.05 90.08 94.77 90.54 80.39 Score: 88.97** | **Dataset: HRSS**  **91.67 92.95 92.44 92.36 89.37 Score: 91.76**  **Dataset: MI-F**  **82.81 81.23 84.63 87.50 83.48 Score: 83.93**  **Dataset: MI-V**  **99.23 98.92 99.58 99.28 99.47 Score: 99.30**  **Dataset: OPTDIGITS**  **99.99 99.97 100.00 99.75 100.00 Score: 99.94**  **Dataset: PENDIGITS**  **100.00 100.00 100.00 99.99 100.00 Score: 100.00**  **Dataset: SATELLITE**  **98.12 98.22 97.23 98.72 95.04 Score: 97.47**  **Dataset: SHUTTLE**  **99.09 99.97 99.99 99.99 100.00 Score: 99.81**  **Dataset: THYROID**  **91.79 86.13 93.78 92.59 88.54 Score: 90.56** | **Dataset: HRSS**  **90.71 92.82 91.90 92.48 92.37 Score: 92.06**  **Dataset: MI-F**  **85.36 77.73 85.35 83.62 83.61 Score: 83.13**  **Dataset: MI-V**  **99.16 99.85 99.76 99.70 99.81 Score: 99.66**  **Dataset: OPTDIGITS**  **100.00 99.59 99.00 100.00 99.98 Score: 99.71**  **Dataset: PENDIGITS**  **95.29 99.22 99.03 96.75 98.51 Score: 97.76**  **Dataset: SATELLITE**  **92.29 95.90 99.05 96.92 98.05 Score: 96.44**  **Dataset: SHUTTLE**  **100.00 99.90 99.99 100.00 100.00 Score: 99.98**  **Dataset: THYROID**  **82.64 87.88 90.87 93.47 88.90 Score: 88.75** |

**Target 3 – Target1**

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| **Dataset: HRSS**  **92.09 93.04 91.68 93.61 89.60 Score: 92.00**  **Dataset: MI-F**  **51.27 48.40 51.22 51.49 51.07 Score: 50.69**  **Dataset: MI-V**  **75.77 76.32 78.19 78.60 79.41 Score: 77.66**  **Dataset: OPTDIGITS**  **99.52 99.49 99.53 99.64 99.94 Score: 99.63**  **Dataset: PENDIGITS**  **100.00 100.00 100.00 99.93 99.80 Score: 99.95**  **Dataset: SATELLITE**  **70.06 70.90 65.71 65.05 71.93 Score: 68.73**  **Dataset: SHUTTLE**  **99.74 99.70 99.50 91.42 94.28 Score: 96.93**  **Dataset: THYROID**  **90.53 90.65 88.58 83.04 87.08 Score: 87.98** | **Dataset: HRSS**  **93.60 94.57 94.04 94.80 91.42 Score: 93.69**  **Dataset: MI-F**  **54.82 51.92 52.78 49.28 50.14 Score: 51.79**  **Dataset: MI-V**  **87.47 83.39 85.47 85.71 86.48 Score: 85.70**  **Dataset: OPTDIGITS**  **99.68 100.00 99.25 99.00 99.75 Score: 99.54**  **Dataset: PENDIGITS**  **99.78 99.98 100.00 99.95 100.00 Score: 99.94**  **Dataset: SATELLITE**  **71.64 76.41 81.25 79.07 73.28 Score: 76.33**  **Dataset: SHUTTLE**  **99.25 99.70 99.43 99.74 94.33 Score: 98.49**  **Dataset: THYROID**  **91.37 88.30 89.87 85.50 70.92 Score: 85.19** | **Dataset: HRSS**  **92.85 95.57 93.88 94.55 92.86 Score: 93.94**  **Dataset: MI-F**  **47.89 50.97 50.69 51.69 48.80 Score: 50.01**  **Dataset: MI-V**  **84.88 84.99 85.50 86.03 85.48 Score: 85.38**  **Dataset: OPTDIGITS**  **98.02 99.42 98.78 99.90 99.04 Score: 99.03**  **Dataset: PENDIGITS**  **99.67 100.00 99.98 99.66 100.00 Score: 99.86**  **Dataset: SATELLITE**  **73.88 75.98 70.17 75.98 73.77 Score: 73.95**  **Dataset: SHUTTLE**  **98.79 99.77 99.93 99.92 99.22 Score: 99.53**  **Dataset: THYROID**  **89.49 87.37 88.91 95.34 93.98 Score: 91.02** |

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| **Dataset: HRSS**  **87.85 88.08 80.77 86.75 75.45 Score: 83.78**  **Dataset: MI-F**  **46.79 43.25 44.02 48.35 42.34 Score: 44.95**  **Dataset: MI-V**  **67.96 67.14 68.86 66.13 65.81 Score: 67.18**  **Dataset: OPTDIGITS**  **80.13 56.09 73.14 54.39 68.13 Score: 66.37**  **Dataset: PENDIGITS**  **71.39 86.07 92.69 60.26 70.12 Score: 76.11**  **Dataset: SATELLITE**  **65.04 63.07 61.12 65.46 62.71 Score: 63.48**  **Dataset: SHUTTLE**  **93.98 86.03 88.76 81.17 84.83 Score: 86.95**  **Dataset: THYROID**  **72.26 85.98 91.06 84.83 92.14 Score: 85.25** | **Dataset: HRSS**  **88.48 88.53 86.54 85.85 84.84 Score: 86.85**  **Dataset: MI-F**  **44.94 50.22 45.38 51.73 40.39 Score: 46.53**  **Dataset: MI-V**  **70.03 70.52 70.16 71.05 71.84 Score: 70.72**  **Dataset: OPTDIGITS**  **83.63 76.58 80.20 80.00 84.44 Score: 80.97**  **Dataset: PENDIGITS**  **90.46 90.31 91.79 81.83 99.24 Score: 90.73**  **Dataset: SATELLITE**  **68.24 72.50 63.42 66.88 64.66 Score: 67.14**  **Dataset: SHUTTLE**  **93.02 77.63 76.34 96.79 91.91 Score: 87.14**  **Dataset: THYROID**  **93.92 66.09 91.20 93.09 86.28 Score: 86.12** | **Dataset: HRSS**  **89.77 89.22 88.45 89.65 86.98 Score: 88.82**  **Dataset: MI-F**  **46.45 46.64 45.46 42.88 43.05 Score: 44.89**  **Dataset: MI-V**  **71.45 72.42 71.65 71.35 72.27 Score: 71.83**  **Dataset: OPTDIGITS**  **89.30 89.92 81.87 79.32 91.76 Score: 86.43**  **Dataset: PENDIGITS**  **92.03 94.73 86.86 96.74 91.35 Score: 92.34**  **Dataset: SATELLITE**  **62.49 66.73 63.80 64.52 64.15 Score: 64.34**  **Dataset: SHUTTLE**  **95.97 92.38 84.19 96.64 98.02 Score: 93.44**  **Dataset: THYROID**  **91.68 90.13 93.58 85.90 74.09 Score: 87.08** |
| **Dataset: HRSS**  **81.88 80.01 84.00 79.50 80.92 Score: 81.26**  **Dataset: MI-F**  **40.28 46.54 45.54 45.39 41.16 Score: 43.78**  **Dataset: MI-V**  **64.54 65.81 64.43 64.07 64.34 Score: 64.64**  **Dataset: OPTDIGITS**  **61.26 45.74 67.11 33.62 76.16 Score: 56.78**  **Dataset: PENDIGITS**  **61.79 57.41 30.59 53.88 27.28 Score: 46.19**  **Dataset: SATELLITE**  **60.57 55.47 60.30 50.45 60.14 Score: 57.39**  **Dataset: SHUTTLE**  **84.95 87.62 93.52 76.08 88.47 Score: 86.13**  **Dataset: THYROID**  **69.25 89.74 81.30 78.08 78.55 Score: 79.39** | **Dataset: HRSS**  **83.74 83.61 85.79 82.48 80.51 Score: 83.23**  **Dataset: MI-F**  **38.74 43.69 42.71 42.42 41.95 Score: 41.90**  **Dataset: MI-V**  **65.44 68.41 68.85 65.60 65.08 Score: 66.68**  **Dataset: OPTDIGITS**  **67.15 54.06 77.53 59.06 78.97 Score: 67.35**  **Dataset: PENDIGITS**  **82.79 90.66 77.37 74.82 65.15 Score: 78.16**  **Dataset: SATELLITE**  **62.78 62.45 55.14 61.82 59.76 Score: 60.39**  **Dataset: SHUTTLE**  **89.15 88.72 76.61 72.93 73.49 Score: 80.18**  **Dataset: THYROID**  **86.11 90.47 92.84 85.39 73.82 Score: 85.73** | **Dataset: HRSS**  **84.02 82.54 83.98 84.47 82.24 Score: 83.45**  **Dataset: MI-F**  **40.23 43.47 42.57 42.00 38.09 Score: 41.27**  **Dataset: MI-V**  **66.38 68.85 67.01 69.24 65.69 Score: 67.43**  **Dataset: OPTDIGITS**  **66.79 56.52 77.72 62.26 80.64 Score: 68.79**  **Dataset: PENDIGITS**  **93.77 91.58 58.02 63.07 61.26 Score: 73.54**  **Dataset: SATELLITE**  **51.56 57.18 66.72 63.37 70.35 Score: 61.83**  **Dataset: SHUTTLE**  **90.09 90.58 88.13 89.00 89.78 Score: 89.51**  **Dataset: THYROID**  **88.08 91.49 87.33 91.80 87.07 Score: 89.15** |

**Target 3 – Target2**

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| **Dataset: HRSS**  **80.83 82.07 79.51 80.13 79.46 Score: 80.40**  **Dataset: MI-F**  **81.79 79.75 83.82 86.68 83.29 Score: 83.07**  **Dataset: MI-V**  **99.10 98.73 98.56 98.80 99.11 Score: 98.86**  **Dataset: OPTDIGITS**  **100.00 99.98 99.98 99.88 100.00 Score: 99.97**  **Dataset: PENDIGITS**  **99.92 100.00 99.44 99.98 99.99 Score: 99.86**  **Dataset: SATELLITE**  **96.87 94.73 92.71 93.65 91.95 Score: 93.98**  **Dataset: SHUTTLE**  **99.99 100.00 99.98 99.97 99.99 Score: 99.99**  **Dataset: THYROID**  **95.38 94.08 87.12 87.05 92.68 Score: 91.26** | **Dataset: HRSS**  **80.58 82.87 78.30 79.59 77.43 Score: 79.75**  **Dataset: MI-F**  **75.85 75.39 82.55 80.66 82.47 Score: 79.38**  **Dataset: MI-V**  **98.55 99.24 99.26 99.63 99.58 Score: 99.25**  **Dataset: OPTDIGITS**  **99.99 100.00 100.00 100.00 99.83 Score: 99.96**  **Dataset: PENDIGITS**  **99.87 100.00 99.64 99.98 100.00 Score: 99.90**  **Dataset: SATELLITE**  **96.56 97.52 95.50 88.69 97.70 Score: 95.19**  **Dataset: SHUTTLE**  **99.99 99.95 99.47 99.96 99.77 Score: 99.83**  **Dataset: THYROID**  **96.72 93.66 97.61 84.27 89.88 Score: 92.43** | **Dataset: HRSS**  **82.07 82.59 71.64 80.57 78.94 Score: 79.16**  **Dataset: MI-F**  **82.38 79.40 81.77 81.38 78.03 Score: 80.59**  **Dataset: MI-V**  **97.79 99.77 99.79 95.19 99.30 Score: 98.37**  **Dataset: OPTDIGITS**  **99.68 99.61 99.58 99.93 99.89 Score: 99.74**  **Dataset: PENDIGITS**  **100.00 100.00 100.00 100.00 100.00 Score: 100.00**  **Dataset: SATELLITE**  **99.01 98.82 89.38 98.40 97.35 Score: 96.59**  **Dataset: SHUTTLE**  **99.97 100.00 99.97 99.97 100.00 Score: 99.98**  **Dataset: THYROID**  **93.54 92.88 94.59 93.48 84.88 Score: 91.87** |
| **Dataset: HRSS**  **85.02 85.68 86.14 86.19 85.72 Score: 85.75**  **Dataset: MI-F**  **78.85 79.48 76.05 79.06 81.91 Score: 79.07**  **Dataset: MI-V**  **99.41 98.89 99.31 98.66 99.07 Score: 99.07**  **Dataset: OPTDIGITS**  **99.96 100.00 99.00 99.99 100.00 Score: 99.79**  **Dataset: PENDIGITS**  **100.00 100.00 100.00 99.98 99.95 Score: 99.99**  **Dataset: SATELLITE**  **97.08 97.58 97.72 97.11 96.83 Score: 97.26**  **Dataset: SHUTTLE**  **99.95 99.99 100.00 99.90 100.00 Score: 99.97**  **Dataset: THYROID**  **85.78 86.92 86.89 88.45 91.72 Score: 87.95** | **Dataset: HRSS**  **82.04 86.81 84.88 83.59 80.35 Score: 83.53**  **Dataset: MI-F**  **80.11 79.43 84.78 82.39 80.76 Score: 81.49**  **Dataset: MI-V**  **95.06 99.68 99.80 98.81 99.87 Score: 98.64**  **Dataset: OPTDIGITS**  **96.86 100.00 100.00 100.00 100.00 Score: 99.37**  **Dataset: PENDIGITS**  **100.00 99.70 97.40 99.97 99.95 Score: 99.40**  **Dataset: SATELLITE**  **97.87 91.09 94.62 91.22 97.89 Score: 94.54**  **Dataset: SHUTTLE**  **99.99 99.97 100.00 99.96 99.99 Score: 99.98**  **Dataset: THYROID**  **89.02 63.37 87.28 90.02 85.61 Score: 83.06** | **Dataset: HRSS**  **87.36 87.92 83.52 85.08 85.64 Score: 85.90**  **Dataset: MI-F**  **79.40 79.94 80.82 79.11 84.24 Score: 80.70**  **Dataset: MI-V**  **99.66 99.47 99.51 99.62 99.38 Score: 99.53**  **Dataset: OPTDIGITS**  **99.99 99.84 99.93 100.00 99.97 Score: 99.95**  **Dataset: PENDIGITS**  **99.98 100.00 99.98 99.99 99.52 Score: 99.89**  **Dataset: SATELLITE**  **98.23 98.81 95.90 98.00 94.51 Score: 97.09**  **Dataset: SHUTTLE**  **99.96 99.97 99.89 100.00 99.94 Score: 99.95**  **Dataset: THYROID**  **72.57 75.78 96.95 91.06 93.79 Score: 86.03** |

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| **Dataset: HRSS**  **90.42 90.07 90.25 90.15 89.58 Score: 90.09**  **Dataset: MI-F**  **82.03 80.62 79.45 85.20 82.14 Score: 81.89**  **Dataset: MI-V**  **97.89 99.22 97.16 96.75 99.40 Score: 98.09**  **Dataset: OPTDIGITS**  **99.89 99.99 99.94 99.57 99.17 Score: 99.71**  **Dataset: PENDIGITS**  **99.99 99.82 100.00 100.00 100.00 Score: 99.96**  **Dataset: SATELLITE**  **97.07 97.92 96.71 97.87 94.92 Score: 96.90**  **Dataset: SHUTTLE**  **99.98 99.92 99.99 99.98 100.00 Score: 99.97**  **Dataset: THYROID**  **90.61 82.96 90.51 93.48 86.88 Score: 88.89** | **Dataset: HRSS**  **86.65 91.83 89.39 91.09 90.72 Score: 89.93**  **Dataset: MI-F**  **84.17 76.85 85.37 81.82 81.14 Score: 81.87**  **Dataset: MI-V**  **99.21 99.63 99.47 99.08 99.28 Score: 99.33**  **Dataset: OPTDIGITS**  **99.99 100.00 100.00 100.00 100.00 Score: 100.00**  **Dataset: PENDIGITS**  **99.98 100.00 99.99 100.00 100.00 Score: 100.00**  **Dataset: SATELLITE**  **95.58 98.51 97.88 90.40 93.28 Score: 95.13**  **Dataset: SHUTTLE**  **99.98 99.99 99.97 99.96 100.00 Score: 99.98**  **Dataset: THYROID**  **95.31 61.85 92.75 90.22 87.42 Score: 85.51** | **Dataset: HRSS**  **74.80 88.94 78.93 87.44 89.06 Score: 83.83**  **Dataset: MI-F**  **82.17 84.08 85.23 81.43 86.27 Score: 83.84**  **Dataset: MI-V**  **99.65 99.35 99.65 98.69 99.75 Score: 99.42**  **Dataset: OPTDIGITS**  **100.00 100.00 99.97 99.90 100.00 Score: 99.97**  **Dataset: PENDIGITS**  **100.00 99.97 100.00 100.00 99.99 Score: 99.99**  **Dataset: SATELLITE**  **98.64 90.46 97.09 91.69 99.07 Score: 95.39**  **Dataset: SHUTTLE**  **99.98 100.00 99.97 99.99 99.99 Score: 99.99**  **Dataset: THYROID**  **93.28 95.83 89.76 95.97 90.02 Score: 92.97** |