1) SSE FOR GRAPH 2

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 0.169408307808487 |
| GSS | 0.196176283451447 |
| CMIM+SVR | 0.318707493311215 |
| CMIM+kNN-R | 0.125834379533632 |
| CMIM+RFR | 0.137618234147015 |
| MIM+SVR | 0.318707493311215 |
| MIM+kNN-R | 0.125834379533632 |
| MIM+RFR | 0.137597773840438 |
| Adaboost+SVR | 0.279213515552829 |
| Adaboost+kNN-R | 0.20346855785858 |
| Adaboost+RFR | 0.169618651970768 |
| C4.5+DTR | 0.0889165524411917 |

2) Time for Graph 2

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 2.15243724266092e-19 |
| GSS | 0.00128838492913433 |
| CMIM+SVR | 2.63971121349993e-10 |
| CMIM+kNN-R | 1.15188507764086e-09 |
| CMIM+RFR | 1.06088305228209e-17 |
| MIM+SVR | 5.25451408658382e-06 |
| MIM+kNN-R | 2.03772691439458e-11 |
| MIM+RFR | 7.63898890328415e-10 |
| Adaboost+SVR | 1.72979359285176e-11 |
| Adaboost+kNN-R | 0.512044296274028 |
| Adaboost+RFR | 2.78768119032366e-14 |
| C4.5+DTR | 8.67909032314401e-12 |

3) C1 C2 Change on Small Graph 1(MSE)

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 0.153555605301794 |
| GSS | 0.168120286615564 |
| CMIM+SVR | 0.271250010359488 |
| CMIM+kNN-R | 0.122402454135761 |
| CMIM+RFR | 0.18857056783973 |
| MIM+SVR | 0.656758262892563 |
| MIM+kNN-R | 0.0430747434026681 |
| MIM+RFR | 0.163450692516651 |
| Adaboost+SVR | 0.266083889491007 |
| Adaboost+kNN-R | 0.052678758597187 |
| Adaboost+RFR | 0.118537420383865 |
| C4.5+DTR | 0.0295552093819496 |
| ESS | 0.0222470440924709 |

3) Small graph1 C1 C2 change (Time)

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 2.25037319775536e-14 |
| GSS | 1.36765401188002e-05 |
| CMIM+SVR | 2.84437373604335e-14 |
| CMIM+kNN-R | 5.87715840704306e-17 |
| CMIM+RFR | 2.16872512615379e-18 |
| MIM+SVR | 6.17047881498714e-13 |
| MIM+kNN-R | 1.41928752999158e-16 |
| MIM+RFR | 2.83013418594654e-19 |
| Adaboost+SVR | 1.37937660539257e-12 |
| Adaboost+kNN-R | 3.20881429161435e-17 |
| Adaboost+RFR | 2.23742063458e-05 |
| C4.5+DTR | 2.2211157958627e-13 |
| ESS | 1.15777687087551e-10 |

4) C1 Change on Graph1 MSE

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 0.0747997357875403 |
| GSS | 6.14934518296556e-08 |
| CMIM+SVR | 2.9747814158435e-08 |
| CMIM+kNN-R | 0.00445334828422981 |
| CMIM+RFR | 1.71861343271587e-17 |
| MIM+SVR | 5.4155411273142e-07 |
| MIM+kNN-R | 0.00577103319930821 |
| MIM+RFR | 8.48536442535894e-17 |
| Adaboost+SVR | 0.000159568371768226 |
| Adaboost+kNN-R | 1.06817154579341e-07 |
| Adaboost+RFR | 0.163048964332991 |
| C4.5+DTR | 4.21825599600242e-08 |

5) C1 Change on Graph1 time

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 2.41399570453354e-13 |
| GSS | 1.12193196222257e-18 |
| CMIM+SVR | 0.382477809332755 |
| CMIM+kNN-R | 1.6356148286415e-06 |
| CMIM+RFR | 3.64751512410336e-15 |
| MIM+SVR | 2.68303475222766e-10 |
| MIM+kNN-R | 1.8811875429069e-09 |
| MIM+RFR | 6.42008018141745e-13 |
| Adaboost+SVR | 5.85233577293277e-14 |
| Adaboost+kNN-R | 4.93945462934786e-14 |
| Adaboost+RFR | 3.41203674545845e-11 |
| C4.5+DTR | 3.66783211966444e-10 |

6) C1 Change in Small Graph1 MSE

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 2.59014085726661e-09 |
| GSS | 9.13418560282296e-06 |
| CMIM+SVR | 0.735068541751863 |
| CMIM+kNN-R | 0.115489123696567 |
| CMIM+RFR | 0.0265340316433996 |
| MIM+SVR | 0.942946352399196 |
| MIM+kNN-R | 0.16873134703277 |
| MIM+RFR | 0.0190559506892059 |
| Adaboost+SVR | 0.878564977189561 |
| Adaboost+kNN-R | 9.92085846695239e-09 |
| Adaboost+RFR | 0.120579110994127 |
| C4.5+DTR | 2.63413688597837e-05 |

7) C1 Change Small Graph1 Time

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 4.63280156760735e-23 |
| GSS | 8.97299790155009e-12 |
| CMIM+SVR | 6.42172285125502e-20 |
| CMIM+kNN-R | 1.20047070325973e-11 |
| CMIM+RFR | 4.51799368081359e-15 |
| MIM+SVR | 2.64209539948278e-10 |
| MIM+kNN-R | 0.366610058106032 |
| MIM+RFR | 1.00229313027492e-08 |
| Adaboost+SVR | 3.18187584355758e-23 |
| Adaboost+kNN-R | 1.64265534545595e-13 |
| Adaboost+RFR | 4.04514037856858e-19 |
| C4.5+DTR | 8.46104894769486e-12 |

8) C1 C2 Change Discrete Graph1 MSE

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 0.0225806221152389 |
| GSS | 1.29610528256738e-05 |
| CMIM+SVR | 1.21229561514438e-10 |
| CMIM+kNN-R | 1.68608937978126e-14 |
| CMIM+RFR | 0.000100199673388002 |
| MIM+SVR | 1.21229561514438e-10 |
| MIM+kNN-R | 3.34486704086468e-14 |
| MIM+RFR | 0.000100199673388002 |
| Adaboost+SVR | 1.21229561514438e-10 |
| Adaboost+kNN-R | 5.14821866166134e-13 |
| Adaboost+RFR | 0.129083581861544 |
| C4.5+DTR | 2.56255048009277e-10 |

9) C1 C2 Change Discrete Graph1 Time

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 4.44839734709113e-18 |
| GSS | 1.34194711838453e-08 |
| CMIM+SVR | 4.029163642881e-22 |
| CMIM+kNN-R | 5.26937080164425e-14 |
| CMIM+RFR | 1.69777520449092e-16 |
| MIM+SVR | 1.41501274736447e-15 |
| MIM+kNN-R | 9.34149271003067e-14 |
| MIM+RFR | 2.83346017395704e-11 |
| Adaboost+SVR | 8.48777903243778e-14 |
| Adaboost+kNN-R | 7.50541319708315e-12 |
| Adaboost+RFR | 1.67202536972619e-14 |
| C4.5+DTR | 4.36265717760072e-14 |

10) C1 C2 Change Discrete Small Graph1 MSE

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 0.000131734349531458 |
| GSS | 0.00015126464740452 |
| CMIM+SVR | 4.78531473845148e-10 |
| CMIM+kNN-R | 5.47484816930943e-10 |
| CMIM+RFR | 0.00598631754223349 |
| MIM+SVR | 4.78530285538893e-10 |
| MIM+kNN-R | 4.70343274906116e-10 |
| MIM+RFR | 0.00568032733904252 |
| Adaboost+SVR | 4.78522158802335e-10 |
| Adaboost+kNN-R | 7.08859116736912e-10 |
| Adaboost+RFR | 0.553151074534259 |
| C4.5+DTR | 3.13689611061592e-09 |
| ESS | 0.000653691877238992 |

11) C1 C2 Change Discrete Small Graph1 time

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 0.00304102872733355 |
| GSS | 1.51795135032821e-07 |
| CMIM+SVR | 1.75199528467427e-12 |
| CMIM+kNN-R | 5.42871427680392e-11 |
| CMIM+RFR | 7.64838253537384e-09 |
| MIM+SVR | 1.71893131061425e-12 |
| MIM+kNN-R | 2.06209049259381e-11 |
| MIM+RFR | 3.86667524485774e-08 |
| Adaboost+SVR | 3.51121155217969e-12 |
| Adaboost+kNN-R | 1.34025822089809e-11 |
| Adaboost+RFR | 4.32120506967976e-06 |
| C4.5+DTR | 1.04987858043678e-09 |
| ESS | 1.11846476190729e-10 |

12) C1 Change Discrete Graph1 MSE

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 0.000160131106542592 |
| GSS | 1.5859655758108e-06 |
| CMIM+SVR | 7.22739423110654e-15 |
| CMIM+kNN-R | 4.35246317708554e-09 |
| CMIM+RFR | 5.21225216868782e-06 |
| MIM+SVR | 7.22739423110654e-15 |
| MIM+kNN-R | 7.32742044741234e-09 |
| MIM+RFR | 0.000144234723049647 |
| Adaboost+SVR | 7.22942716958537e-15 |
| Adaboost+kNN-R | 3.76023650931852e-08 |
| Adaboost+RFR | 0.0547319151768513 |
| C4.5+DTR | 8.38039507584933e-10 |

13) C1 Change Discrete Graph1 Time

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 1.31581606149206e-07 |
| GSS | 0.0132463716792466 |
| CMIM+SVR | 1.90648398210644e-07 |
| CMIM+kNN-R | 0.000147628909822631 |
| CMIM+RFR | 2.14770112150847e-06 |
| MIM+SVR | 6.20846349735233e-07 |
| MIM+kNN-R | 0.00233094768019353 |
| MIM+RFR | 2.35848977520799e-07 |
| Adaboost+SVR | 3.82960183610154e-08 |
| Adaboost+kNN-R | 9.98858122195357e-06 |
| Adaboost+RFR | 0.000566394409950956 |
| C4.5+DTR | 5.89666280902493e-12 |

14) C1 and C2 on Graph1 MSE (high sample)

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 0.165101689766827 |
| GSS | 0.168748328792184 |
| CMIM+SVR | 3.51965095257758e-07 |
| CMIM+kNN-R | 0.027767940342588 |
| CMIM+RFR | 0.0665807932651907 |
| MIM+SVR | 3.51965095257758e-07 |
| MIM+kNN-R | 0.027767940342588 |
| MIM+RFR | 0.0664247053550063 |
| Adaboost+SVR | 0.331549036942575 |
| Adaboost+kNN-R | 0.185880690450661 |
| Adaboost+RFR | 0.186596969881032 |
| C4.5+DTR | 0.022859738384674 |

15) C1 and C2 on Graph1\_time(high sample)

|  |  |
| --- | --- |
| Baseline | 6.4212007264898e-13 |
| GSS | 2.85377559904049e-13 |
| CMIM+SVR | 6.2425863862904e-07 |
| CMIM+kNN-R | 2.37749020307993e-06 |
| CMIM+RFR | 4.83987972263092e-10 |
| MIM+SVR | 1.20500961755472e-17 |
| MIM+kNN-R | 1.29514661998404e-07 |
| MIM+RFR | 5.61232065860254e-15 |
| Adaboost+SVR | 7.02545245432906e-18 |
| Adaboost+kNN-R | 2.37785717764411e-14 |
| Adaboost+RFR | 8.29959606405202e-15 |
| C4.5+DTR | 1.54826037856295e-06 |
| Baseline | 6.4212007264898e-13 |

16) no effect by context Graph1 mse

|  |  |
| --- | --- |
| Methods | t-val |
| Baseline | 6.75139841417791e-12 |
| GSS | 0.000906345073713975 |
| CMIM+SVR | 0.00561252589400379 |
| CMIM+kNN-R | 1.03611057560924e-06 |
| CMIM+RFR | 1.22542216830993e-11 |
| MIM+SVR | 1.0319352458356e-05 |
| MIM+kNN-R | 1.16428700770721e-07 |
| MIM+RFR | 4.53716352138139e-10 |
| Adaboost+SVR | 0.0305582819049498 |
| Adaboost+kNN-R | 0.0138913206293528 |
| Adaboost+RFR | 3.99361436899645e-10 |
| C4.5+DTR | 2.01946432151125e-07 |

17) Different MB approaches MSE

Situation: Graph2 with change in C1 C2 with normal sample size

|  |  |  |
| --- | --- | --- |
| MB methods | MB | MSE using RandomForestRegresor |
| GS | C1, P,Y,Z,X | 1034.40 |
| IAMB | C1, P,Y | 1029.22 |
| IAMB.FDR | C1, P,Y | 1029.27 |
| IAMB.INTER | C1, P,Y | 1031.82 |
| IAMB.FAST | C1, P,Y,Z,X | 1034.15 |
| MMMB | C1, P,Y,Z | 1032.17 |
| HINTON-PC | C1, P,Y,Z | 1029.22 |

Change in MSE for multiple MB approaches is due to the fitting of random forest regressor which is re generated for each case.

18) : Graph2 with change in C1 C2 with low sample size

(Experiments have been done and results are very bad as MB was not right in any of the cases please tell me if table is still needed I will send.