

approximate_bayesian_computation

Parameters

cm_name: abc_10
dataframe_in: data_missing_10
description: Approximate Bayesian Computation for Time Series
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: approximate_bayesian_computation
name: approximate_bayesian_computation
parameters:
 algorithm: pydream
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_chains: 3
 n_draws: 20000
 n_iterations: 100
 nfe: 15000
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - - 10
 seed: 5
report_parameters: {}
running_time: 440101.1344997883
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	1.726671	10.863274
1	2.997939	9.660009
2	1.898120	11.149995
3	1.898120	11.149995
4	1.898120	11.149995
...
17979	2.738319	7.068737
17980	2.738319	7.068737
17981	2.738319	7.068737

17982	2.738319	7.068737
17983	2.738319	7.068737

[17984 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	2.738333	6.902572
1	2.738333	6.902572
2	2.738333	6.902572
3	2.738333	6.902572
4	2.738333	6.902572
..
655	2.738332	6.902572
656	2.738331	6.902572
657	2.738330	6.902572
658	2.738330	6.902572
659	2.738329	6.902572

[660 rows x 2 columns]

with an acceptance percentage of 30.01183866073066%

approximate_bayesian_computation

Parameters

cm_name: abc_25
dataframe_in: data_missing_25
description: Approximate Bayesian Computation for Time Series
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: approximate_bayesian_computation
name: approximate_bayesian_computation
parameters:
 algorithm: pydream
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_chains: 3
 n_draws: 20000
 n_iterations: 100
 nfe: 15000
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - 10
 seed: 5
report_parameters: {}
running_time: 439825.86255431175
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	1.726671	11.008826
1	2.997939	10.072151
2	1.898120	9.906403
3	1.898120	9.906403
4	1.898120	9.906403
...
14649	2.737884	10.134570
14650	2.737884	10.134570
14651	2.737884	10.134570

14652	2.737884	10.134570
14653	2.737884	10.134570

[14654 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	2.177988	5.906893
1	2.177988	5.906893

with an acceptance percentage of 24.464342287362648%

approximate_bayesian_computation

Parameters

cm_name: abc_50
dataframe_in: data_missing_50
description: Approximate Bayesian Computation for Time Series
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: approximate_bayesian_computation
name: approximate_bayesian_computation
parameters:
 algorithm: pydream
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_chains: 3
 n_draws: 20000
 n_iterations: 100
 nfe: 15000
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - - 10
 seed: 5
report_parameters: {}
running_time: 441853.38772153854
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	1.726671	28.126872
1	2.997939	29.886268
2	1.898120	23.241406
3	1.898120	23.241406
4	1.898120	23.241406
...
17652	1.898129	23.724239
17653	1.898131	23.776956
17654	1.898132	23.776956

17655	1.898133	23.240786
17656	1.898135	25.623522

[17657 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	1.898107	23.095985
1	1.898107	23.095985
2	1.898108	23.095985

with an acceptance percentage of 30.296966968469146%

approximate_bayesian_computation

Parameters

cm_name: abc_75
dataframe_in: data_missing_75
description: Approximate Bayesian Computation for Time Series
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: approximate_bayesian_computation
name: approximate_bayesian_computation
parameters:
 algorithm: pydream
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_chains: 3
 n_draws: 20000
 n_iterations: 100
 nfe: 15000
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - 10
 seed: 5
report_parameters: {}
running_time: 442101.68437719345
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	1.726671	21.125329
1	1.000000	25.576087

with the most optimal solution:

	Manufacturing_Time	Distance
0	1.726671	21.125329

with an acceptance percentage of 0.0%

approximate_bayesian_computation

Parameters

cm_name: abc_90
dataframe_in: data_missing_90
description: Approximate Bayesian Computation for Time Series
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: approximate_bayesian_computation
name: approximate_bayesian_computation
parameters:
 algorithm: pydream
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_chains: 3
 n_draws: 20000
 n_iterations: 100
 nfe: 15000
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - 10
 seed: 5
report_parameters: {}
running_time: 441448.4954228401
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	1.726671	18.234829
1	1.000000	19.188926

with the most optimal solution:

	Manufacturing_Time	Distance
0	1.726671	18.234829

with an acceptance percentage of 0.0%

genetic_algorithm

```

cm_name: ga_10
dataframe_in: data_missing_10
description: Genetic Algorithm for optimization of timeseries
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: genetic_algorithm
name: genetic_algorithm
parameters:
  algorithm: epsNSGAI1
  decision_variables:
    - Manufacturing_Time
  epsilons:
    - 1
  n_draws: 20000
  n_iterations: 100
  nfe: 15000
  objectives:
    - Manufacturer
    - Export_Port
    - Transit_Port
    - Import_Port
    - Wholesales_Distributor
    - Retailer_Amsterdam
    - Retailer_Utrecht
    - Retailer_Venlo
  population_size: 100
  ranges_variables:
    - - 1
    - 10
  seed: 5
report_parameters: {}
running_time: 358331.8049724102
type: calibrationmodel
version: 1.0.0

```

Results

Summary CalibrationModel with solutions

Manufacturer	Export_Port	Transit_Port	Import_Port	Wholesales_Distributor
Manufacturer_Amsterdam	Manufacturer_Utrecht	Manufacturer_Venlo		
0	2.17106	2.761804	2.761804	2.761804
2.761804	2.761804			

[illegible]

Parameters

```

cm_name: ga_25
dataframe_in: data_missing_25
description: Genetic Algorithm for optimization of timeseries
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: genetic_algorithm
name: genetic_algorithm
parameters:
  algorithm: epsNSGAI1
  decision_variables:
    - Manufacturing_Time
  epsilons:
    - 1
  n_draws: 20000
  n_iterations: 100
  nfe: 15000
  objectives:
    - Manufacturer
    - Export_Port
    - Transit_Port
    - Import_Port
    - Wholesales_Distributor
    - Retailer_Amsterdam
    - Retailer_Utrecht
    - Retailer_Venlo
  population_size: 100
  ranges_variables:
    - - 1
    - 10
  seed: 5
report_parameters: {}
running_time: 361395.0954146385
type: calibrationmodel
version: 1.0.0

```

Results

Summary CalibrationModel with solutions

Manufacturing_Time	Manufacturer	Export_Port	Transit_Port	Import_Port	Wholesales_Distributor
Retailer_Amsterdam	Retailer_Utrecht	Retailer_Venlo			
0	2.717162	2.108948	2.108948	2.108948	2.108948
2.108948	2.108948				

[illegible]

genetic_algorithm

```

cm_name: ga_50
dataframe_in: data_missing_50
description: Genetic Algorithm for optimization of timeseries
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: genetic_algorithm
name: genetic_algorithm
parameters:
  algorithm: epsNSGAI1
  decision_variables:
    - Manufacturing_Time
  epsilons:
    - 1
  n_draws: 20000
  n_iterations: 100
  nfe: 15000
  objectives:
    - Manufacturer
    - Export_Port
    - Transit_Port
    - Import_Port
    - Wholesales_Distributor
    - Retailer_Amsterdam
    - Retailer_Utrecht
    - Retailer_Venlo
  population_size: 100
  ranges_variables:
    - - 1
      - 10
  seed: 5
report_parameters: {}
running_time: 343656.234641552
type: calibrationmodel
version: 1.0.0

```

Results

Summary CalibrationModel with solutions

Manufacturer	Export_Port	Transit_Port	Import_Port	Wholesales_Distributor
Manufacturer_Amsterdam	Manufacturer_Utrecht	Manufacturer_Venlo		
0	2.50622	8.783026	8.783026	8.783026
8.783026	8.783026			

[illegible]

Parameters

version: 1.0.0

Results

Summary CalibrationModel with solutions

[illegible]

genetic_algorithm

```

cm_name: ga_90
dataframe_in: data_missing_90
description: Genetic Algorithm for optimization of timeseries
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: genetic_algorithm
name: genetic_algorithm
parameters:
  algorithm: epsNSGAI1
  decision_variables:
    - Manufacturing_Time
  epsilons:
    - 1
  n_draws: 20000
  n_iterations: 100
  nfe: 15000
  objectives:
    - Manufacturer
    - Export_Port
    - Transit_Port
    - Import_Port
    - Wholesales_Distributor
    - Retailer_Amsterdam
    - Retailer_Utrecht
    - Retailer_Venlo
  population_size: 100
  ranges_variables:
    - - 1
    - 10
  seed: 5
report_parameters: {}
running_time: 363815.5134241581
type: calibrationmodel
version: 1.0.0

```

Results

Summary CalibrationModel with solutions

Manufacturing_Time	Manufacturer	Export_Port	Transit_Port	Import_Port	Wholesales_Distributor
Retailer_Amsterdam	Retailer_Utrecht	Retailer_Venlo			
0	2.366951	9.590297	9.590297	9.590297	9.590297
9.590297	9.590297				

[illegible]

powell_method

Parameters

cm_name: powell_10
dataframe_in: data_missing_10
description: Powell Method for optimization of timeseries with simulation
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: powell_method
name: powell_method
parameters:
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_draws: 20000
 n_iterations: 100
 nfe: 1500
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - - 10
 seed: 5
report_parameters: {}
running_time: 1993.7279949188232
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	3.03752	6.59544

powell_method

Parameters

cm_name: powell_25
dataframe_in: data_missing_25
description: Powell Method for optimization of timeseries with simulation
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: powell_method
name: powell_method
parameters:
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_draws: 20000
 n_iterations: 100
 nfe: 1500
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - - 10
 seed: 5
report_parameters: {}
running_time: 1348.5547921657562
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	3.124521	6.136372

powell_method

Parameters

cm_name: powell_50
dataframe_in: data_missing_50
description: Powell Method for optimization of timeseries with simulation
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: powell_method
name: powell_method
parameters:
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_draws: 20000
 n_iterations: 100
 nfe: 1500
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - - 10
 seed: 5
report_parameters: {}
running_time: 1014.770126581192
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	7.130147	16.420108

powell_method

Parameters

cm_name: powell_75
dataframe_in: data_missing_75
description: Powell Method for optimization of timeseries with simulation
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: powell_method
name: powell_method
parameters:
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_draws: 20000
 n_iterations: 100
 nfe: 1500
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - - 10
 seed: 5
report_parameters: {}
running_time: 1542.446444272995
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	6.562306	22.132617

powell_method

Parameters

cm_name: powell_90
dataframe_in: data_missing_90
description: Powell Method for optimization of timeseries with simulation
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: powell_method
name: powell_method
parameters:
 decision_variables:
 - Manufacturing_Time
 epsilons:
 - 1
 n_draws: 20000
 n_iterations: 100
 nfe: 1500
 objectives:
 - Manufacturer
 - Export_Port
 - Transit_Port
 - Import_Port
 - Wholesales_Distributor
 - Retailer_Amsterdam
 - Retailer_Utrecht
 - Retailer_Venlo
 population_size: 100
 ranges_variables:
 - - 1
 - - 10
 seed: 5
report_parameters: {}
running_time: 990.426207780838
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	2.757113	15.492525

Summary

Model Name	Model Method	Score	Difference Function	Dataframe	Duration	Solution Params
powell_90	powell_method	0.97	manhattan_metrics	data_missing_90	990.426 sec	{'Manufacturing_Time': 2.757112770438339}
powell_75	powell_method	0.55	manhattan_metrics	data_missing_75	1542.446 sec	{'Manufacturing_Time': 6.562305898749053}
powell_50	powell_method	0.49	manhattan_metrics	data_missing_50	1014.770 sec	{'Manufacturing_Time': 7.130146647567976}
powell_25	powell_method	0.93	manhattan_metrics	data_missing_25	1348.555 sec	{'Manufacturing_Time': 3.1245207100517716}
powell_10	powell_method	0.94	manhattan_metrics	data_missing_10	1993.728 sec	{'Manufacturing_Time': 3.0375201203501763}
ga_90	genetic_algorithm	0.99	manhattan_metrics	data_missing_90	363815.513 sec	{'Manufacturing_Time': 2.366951423829426}
ga_75	genetic_algorithm	0.52	manhattan_metrics	data_missing_75	342068.805 sec	{'Manufacturing_Time': 6.783766120387492}
ga_50	genetic_algorithm	1.0	manhattan_metrics	data_missing_50	343656.235 sec	{'Manufacturing_Time': 2.5062204163804855}
ga_25	genetic_algorithm	0.98	manhattan_metrics	data_missing_25	361395.095 sec	{'Manufacturing_Time': 2.717161945365775}
ga_10	genetic_algorithm	0.96	manhattan_metrics	data_missing_10	358331.805 sec	{'Manufacturing_Time': 2.171060278458004}
abc_90	approximate_bayesian_computation	0.91	manhattan_metrics	data_missing_90	441448.495 sec	{'Manufacturing_Time': 1.7266714188838739}
abc_75	approximate_bayesian_computation	0.91	manhattan_metrics	data_missing_75	442101.684 sec	{'Manufacturing_Time': 1.7266714188838739}
abc_50	approximate_bayesian_computation	0.93	manhattan_metrics	data_missing_50	441853.388 sec	{'Manufacturing_Time': 1.8981073669267619}
abc_25	approximate_bayesian_computation	0.96	manhattan_metrics	data_missing_25	439825.863 sec	{'Manufacturing_Time': 2.177987716681293}
abc_10	approximate_bayesian_computation	0.97	manhattan_metrics	data_missing_10	440101.134 sec	{'Manufacturing_Time': 2.7383325469023854}