

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: 30
report_parameters: {}
running_time: 432077.7103731632
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	2.226109	7.551075
1	2.226109	7.551075
2	2.226109	7.551075
3	2.226109	7.551075
4	2.226109	7.551075
...
4664	3.349766	8.065861
4665	3.349760	8.093222
4666	3.349754	8.143036

4667	2.153087	7.936773
4668	2.172599	7.810646

[4669 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	2.172297	5.843849
1	2.172298	5.843849
2	2.172298	5.843849
3	2.172298	5.843849

with an acceptance percentage of 7.800176746202457%

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: 30
report_parameters: {}
running_time: 422145.65921378136
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	2.226109	7.994047
1	2.226109	7.994047
2	2.226109	7.994047
3	2.226109	7.994047
4	2.226109	7.994047
...
16522	2.397132	6.667321
16523	2.397132	6.667321
16524	2.397132	6.667321

16525	2.397132	6.667321
16526	2.397132	6.667321

[16527 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	2.397133	6.667321
1	2.397133	6.667321
2	2.397133	6.667321
3	2.397133	6.667321
4	2.397133	6.667321
..
909	2.397132	6.667321
910	2.397132	6.667321
911	2.397132	6.667321
912	2.397132	6.667321
913	2.397132	6.667321

[914 rows x 2 columns]

with an acceptance percentage of 27.73414703283144%

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: 30
report_parameters: {}
running_time: 405913.3776702881
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	3.349760	12.595551
1	3.349760	12.595551
2	3.349760	12.595551
3	3.349760	12.595551
4	3.349760	12.595551
...
18161	3.353420	12.440077
18162	3.353420	12.440077
18163	3.353426	12.440084

18164	3.353431	12.440084
18165	3.353436	10.847544

[18166 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	3.353435	10.84754

with an acceptance percentage of 30.378670401680758%

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: 30
report_parameters: {}
running_time: 431427.1736238003
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	3.349760	23.423298
1	1.177835	23.325858
2	1.177835	23.325858
3	1.177835	23.325858
4	1.177835	23.325858
...
12570	2.243201	19.981754
12571	2.243201	19.981754
12572	2.243201	19.981754

12573	2.243201	19.981754
12574	2.243201	19.981754

[12575 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	3.291415	15.890468
1	3.291415	15.890468
2	3.291415	15.890468
3	3.291415	15.890468
4	3.291415	15.890468
...
3993	3.291414	15.890468
3994	3.291414	15.890468
3995	3.291414	15.890468
3996	3.291414	15.890468
3997	3.291414	15.890468

[3998 rows x 2 columns]

with an acceptance percentage of 20.98444299934971%

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: 30
report_parameters: {}
running_time: 436612.4161787033
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	2.226109	15.129955
1	5.195231	19.049433
2	3.023306	15.411547
3	6.797292	23.256284
4	3.349760	15.830929
...
2404	2.806017	15.228344
2405	2.806017	15.228344
2406	2.806017	15.228344

2407	2.460897	15.020440
2408	2.115778	13.472553

[2409 rows x 2 columns]

with the most optimal solution:

Manufacturing_Time Distance

0	2.115778	13.472553
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with an acceptance percentage of 4.013472729394894%

Parameters

```

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: 30
report_parameters: {}
running_time: 348100.34425759315
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	2.261198	2.768489	2.768489	2.768489	2.768489	2.768489
2.768489	2.768489					

[illegible]

genetic_algorithm

```

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: 30
report_parameters: {}
running_time: 355362.7244617939
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	2.31549	2.188567	2.188567	2.188567
2.188567	2.188567			

[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: 30
report_parameters: {}
running_time: 353349.2021205425
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	2.520919	4.745791	4.745791	4.745791	4.745791	4.745791
4.745791	4.745791					

[illegible]

Parameters

```

cm_name: ga_75
dataframe_in: data_missing_75
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: 30
report_parameters: {}
running_time: 354585.20345282555
type: calibrationmodel
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: 30
report_parameters: {}
running_time: 348616.0480413437
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	2.395708	7.666193	7.666193	7.666193
7.666193	7.666193			

[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: 30
report_parameters: {}
running_time: 1189.1614332199097
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	2.908968	5.709939

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: 30
report_parameters: {}
running_time: 1434.7149860858917
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	2.733976	3.665413

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: 30
report_parameters: {}
running_time: 2001.4003760814667
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	2.528118	7.423446

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: 30
report_parameters: {}
running_time: 1908.745833158493
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	2.97593	12.181331

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: 30
report_parameters: {}
running_time: 1195.14510679245
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	3.06668	12.066385

Summary

Model Name	Model Method	Score	Difference Function	Dataframe	Duration	Solution Params
powell_90	powell_method	0.94	manhattan_metrics	data_missing_90	1195.145 sec	{'Manufacturing_Time': 3.0666797127905974}
powell_75	powell_method	0.95	manhattan_metrics	data_missing_75	1908.746 sec	{'Manufacturing_Time': 2.9759301224650514}
powell_50	powell_method	1.0	manhattan_metrics	data_missing_50	2001.400 sec	{'Manufacturing_Time': 2.528117731012233}
powell_25	powell_method	0.97	manhattan_metrics	data_missing_25	1434.715 sec	{'Manufacturing_Time': 2.7339756053408304}
powell_10	powell_method	0.95	manhattan_metrics	data_missing_10	1189.161 sec	{'Manufacturing_Time': 2.9089680204700508}
ga_90	genetic_algorithm	0.99	manhattan_metrics	data_missing_90	348616.048 sec	{'Manufacturing_Time': 2.395707794129828}
ga_75	genetic_algorithm	0.93	manhattan_metrics	data_missing_75	354585.203 sec	{'Manufacturing_Time': 3.122280264666436}
ga_50	genetic_algorithm	1.0	manhattan_metrics	data_missing_50	353349.202 sec	{'Manufacturing_Time': 2.520919269732937}
ga_25	genetic_algorithm	0.98	manhattan_metrics	data_missing_25	355362.724 sec	{'Manufacturing_Time': 2.3154903447295965}
ga_10	genetic_algorithm	0.97	manhattan_metrics	data_missing_10	348100.344 sec	{'Manufacturing_Time': 2.2611981752648673}
abc_90	approximate_bayesian_computation	0.96	manhattan_metrics	data_missing_90	436612.416 sec	{'Manufacturing_Time': 2.115778123861375}
abc_75	approximate_bayesian_computation	0.91	manhattan_metrics	data_missing_75	431427.174 sec	{'Manufacturing_Time': 3.291414960742663}
abc_50	approximate_bayesian_computation	0.91	manhattan_metrics	data_missing_50	405913.378 sec	{'Manufacturing_Time': 3.3534351852297304}
abc_25	approximate_bayesian_computation	0.99	manhattan_metrics	data_missing_25	422145.659 sec	{'Manufacturing_Time': 2.3971332069782614}
abc_10	approximate_bayesian_computation	0.96	manhattan_metrics	data_missing_10	432077.710 sec	{'Manufacturing_Time': 2.1722969124821905}