

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: 40
report_parameters: {}
running_time: 241789.29946494102
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	7.444785	22.331951
1	3.104000	10.390146
2	3.104000	10.390146
3	3.104000	10.390146
4	3.104000	10.390146
...
5882	3.104004	9.258599
5883	3.104004	9.258599
5884	3.104005	9.258599
5885	3.104005	9.258599

5886 4.669183 16.094931

[5887 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	3.104001	9.258599
1	3.104002	9.258599
2	3.104002	9.258599
3	3.104002	9.258599
4	3.104002	9.258599
5	3.104003	9.258599
6	3.104003	9.258599
7	3.104003	9.258599
8	3.104004	9.258599
9	3.104004	9.258599
10	3.104004	9.258599
11	3.104005	9.258599
12	3.104005	9.258599

with an acceptance percentage of 9.812749070415022%

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: 40
report_parameters: {}
running_time: 253749.88788962364
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	2.285519	8.002191
1	2.285519	8.002191
2	2.285519	8.002191
3	2.285519	8.002191
4	2.285519	8.002191
...
15785	2.285523	7.190032
15786	2.285523	7.190032
15787	2.285523	7.190032
15788	2.285523	7.190032

15789 2.285523 7.190032

[15790 rows x 2 columns]
with the most optimal solution:
 Manufacturing_Time Distance

0	2.285523	7.190032
1	2.285523	7.190032
2	2.285523	7.190032
3	2.285523	7.190032
4	2.285523	7.190032
...
12794	2.285523	7.190032
12795	2.285523	7.190032
12796	2.285523	7.190032
12797	2.285523	7.190032
12798	2.285523	7.190032

[12799 rows x 2 columns]
with an acceptance percentage of 26.545278708752267%

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: 40
report_parameters: {}
running_time: 253945.81925272942
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	2.285519	30.847750
1	1.312666	27.655371
2	1.000000	25.859174
3	9.828450	60.831937
4	8.855596	60.020994
5	7.882743	43.590043
6	6.909890	39.165087
7	5.937036	38.684975
8	4.964183	34.803725

with the most optimal solution:

Manufacturing_Time Distance
0 1.0 25.859174
with an acceptance percentage of 0.015006753038867489%

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: 40
report_parameters: {}
running_time: 253731.60568404198
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	7.444785	27.150430
1	1.000000	17.627407
2	2.285519	12.764931
3	2.285519	12.764931
4	2.285519	12.764931
...
6202	2.285518	12.764931
6203	2.285518	12.764931
6204	2.285518	12.764931
6205	2.285518	12.764931

6206 2.285520 12.764928

[6207 rows x 2 columns]

with the most optimal solution:

 Manufacturing_Time Distance

0 2.28552 12.764928

1 2.28552 12.764928

with an acceptance percentage of 10.6531272405916%

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: 40
report_parameters: {}
running_time: 260778.57673454285
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	4.669183	36.839733
1	9.828450	36.359360
2	8.855596	35.964462
3	8.190760	29.408075
4	8.190760	29.408075
...
8401	1.620682	22.462128
8402	1.620682	22.462128
8403	1.620682	22.462128
8404	1.620682	22.462128

8405 1.620682 22.462128

[8406 rows x 2 columns]

with the most optimal solution:

 Manufacturing_Time Distance

0 2.093249 19.623119

with an acceptance percentage of 13.994630917246095%

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: 40
report_parameters: {}
running_time: 181046.49398303032
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	2.406845	2.713639	2.713639	2.713639
2.713639	2.713639			

[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: 40
report_parameters: {}
running_time: 180110.33701872826
type: calibrationmodel
version: 1.0.0

```

Results

Summary CalibrationModel with solutions

Manufacturer	Export_Port	Transit_Port	Import_Port	Wholesales_Distributor
Manufacturer_Amsterdam	2.438643	2.811091	2.811091	2.811091
Manufacturer_Utrecht	2.811091	2.811091	2.811091	2.811091
Manufacturer_Venlo	2.811091	2.811091	2.811091	2.811091

[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: 40
report_parameters: {}
running_time: 175908.12868094444
type: calibrationmodel
version: 1.0.0

```

Results

Summary CalibrationModel with solutions

[illegible]

genetic_algorithm

```

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: 40
report_parameters: {}
running_time: 179392.1881799698
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	2.404935	7.485436	7.485436	7.485436	7.485436	7.485436
7.485436	7.485436					

[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: 40
report_parameters: {}
running_time: 184023.04828977585
type: calibrationmodel
version: 1.0.0

```

Results

Summary CalibrationModel with solutions

[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: 40
report_parameters: {}
running_time: 560.424322605133
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	2.782476	5.865463

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: 40
report_parameters: {}
running_time: 2353.881467819214
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	3.110084	4.550619

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: 40
report_parameters: {}
running_time: 475.9682855606079
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	6.68785	16.129513

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: 40
report_parameters: {}
running_time: 1605.4205026626587
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	3.124612	11.594806

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: 40
report_parameters: {}
running_time: 697.4448068141937
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	1.501553	18.39829

Summary

Model Name	Model Method	Score	Difference Function	Dataframe	Duration	Solution Params
powell_90	powell_method	0.89	manhattan_metrics	data_missing_90	697.445 sec	{'Manufacturing_Time': 1.501552810007571}
powell_75	powell_method	0.93	manhattan_metrics	data_missing_75	1605.421 sec	{'Manufacturing_Time': 3.1246117974981074}
powell_50	powell_method	0.53	manhattan_metrics	data_missing_50	475.968 sec	{'Manufacturing_Time': 6.687849811310741}
powell_25	powell_method	0.93	manhattan_metrics	data_missing_25	2353.881 sec	{'Manufacturing_Time': 3.1100841613049273}
powell_10	powell_method	0.97	manhattan_metrics	data_missing_10	560.424 sec	{'Manufacturing_Time': 2.782476122149123}
ga_90	genetic_algorithm	0.94	manhattan_metrics	data_missing_90	184023.048 sec	{'Manufacturing_Time': 1.938891914742014}
ga_75	genetic_algorithm	0.99	manhattan_metrics	data_missing_75	179392.188 sec	{'Manufacturing_Time': 2.4049347205383538}
ga_50	genetic_algorithm	0.94	manhattan_metrics	data_missing_50	175908.129 sec	{'Manufacturing_Time': 1.9379132518924007}
ga_25	genetic_algorithm	0.99	manhattan_metrics	data_missing_25	180110.337 sec	{'Manufacturing_Time': 2.438643339036705}
ga_10	genetic_algorithm	0.99	manhattan_metrics	data_missing_10	181046.494 sec	{'Manufacturing_Time': 2.4068453672726124}
abc_90	approximate_bayesian_computation	0.95	manhattan_metrics	data_missing_90	260778.577 sec	{'Manufacturing_Time': 2.0932485121327566}
abc_75	approximate_bayesian_computation	0.98	manhattan_metrics	data_missing_75	253731.606 sec	{'Manufacturing_Time': 2.285519829160757}
abc_50	approximate_bayesian_computation	0.83	manhattan_metrics	data_missing_50	253945.819 sec	{'Manufacturing_Time': 1.0}
abc_25	approximate_bayesian_computation	0.98	manhattan_metrics	data_missing_25	253749.888 sec	{'Manufacturing_Time': 2.2855232584682437}
abc_10	approximate_bayesian_computation	0.93	manhattan_metrics	data_missing_10	241789.299 sec	{'Manufacturing_Time': 3.1040012533182377}