INTERACTIVE CONCEPT MATRIX

FOR MACHINE LEARNING IN BUSINESS PROCESS MANAGEMENT
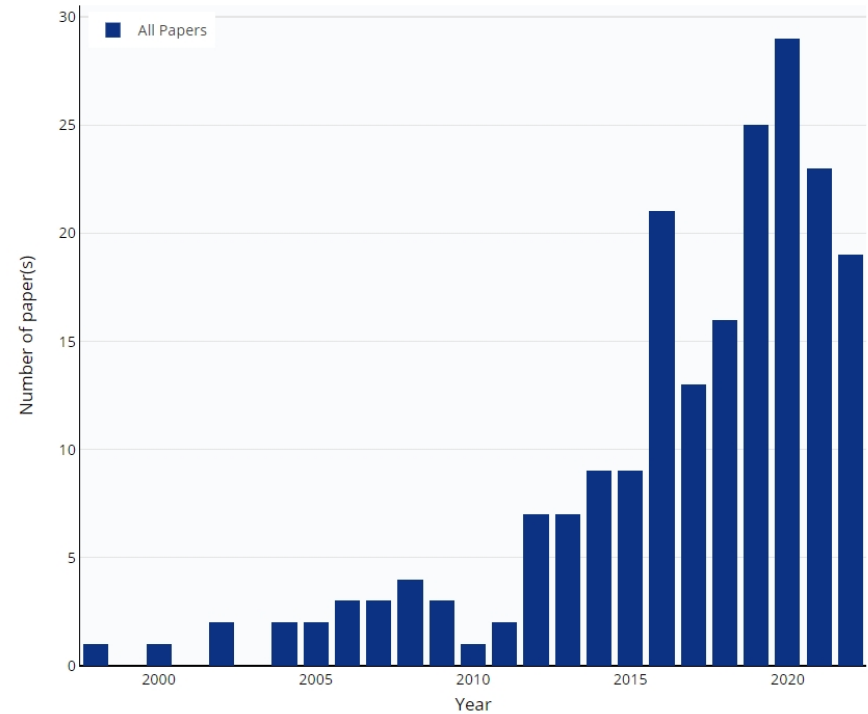
CONCEPT DEVELOPMENT OVER TIME	INTERSECTION OF CONCEPTS	COMPLETE CODING TABLE

The bar chart shows the number of papers in different categories every year.

Select a category

All Papers ▾

Click a bar in the bar chart to display the selected papers in the table below.

Clear table filter

Papers

Authors	Title	Year
⇕	⇕	⇕
Aa filter data...	Aa	Aa
Mustansir A., Shahzad K., Malik M.K.	Towards automatic business process redesign: An NLP based approach to extract redesign suggestions	2022

INTERACTIVE CONCEPT MATRIX
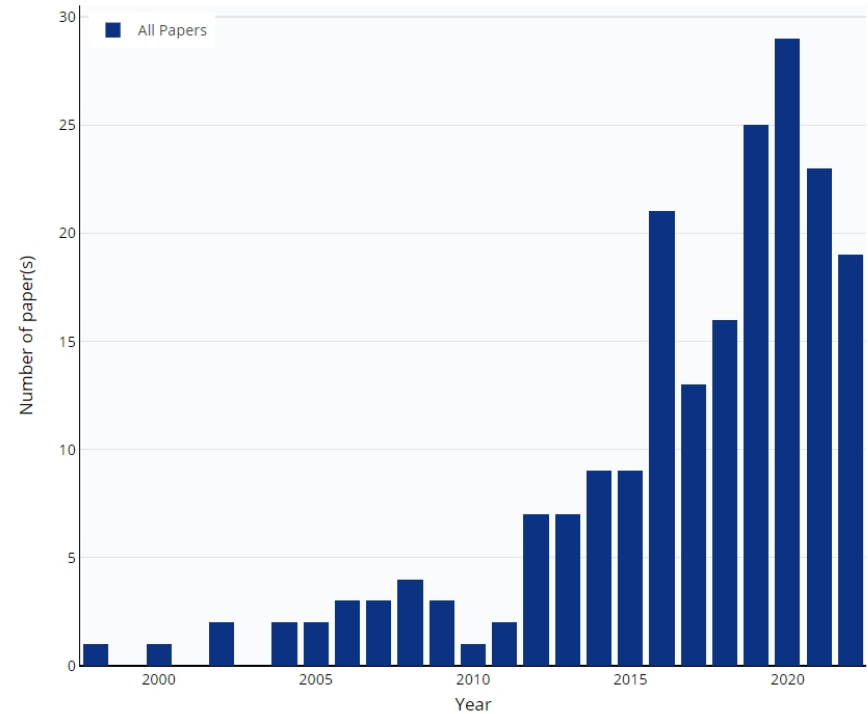
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Select a category

All Papers ▾

Click a bar in the bar chart to display the selected papers in the table below.

Clear table filter

Paper(s) of year 2020

Authors	Title	Year
⇕	⇕	⇕
Aa	Aa filter data...	Aa
Mehdiyev N., Evermann J., Fettke P.	A novel business process prediction model using a deep learning method	2020

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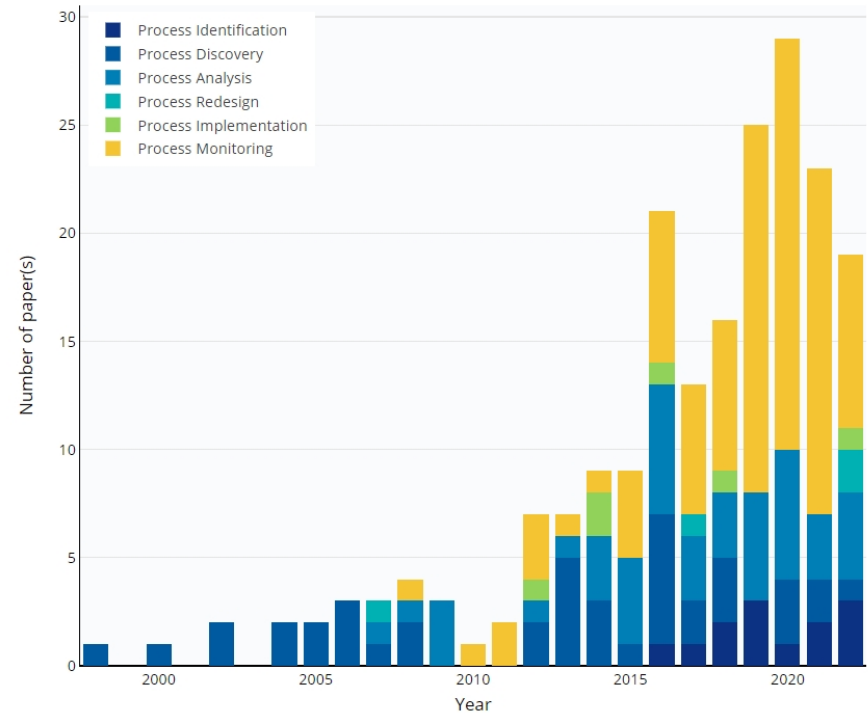
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The bar chart shows the number of papers in different categories every year.

Select a category

BPM Lifecycle ▾

Click a bar in the bar chart to display the selected papers in the table below.

Legend:
- Process Identification
- Process Discovery
- Process Analysis
- Process Redesign
- Process Implementation
- Process Monitoring

Y-axis: Number of paper(s)
X-axis: Year

Clear table filter

Papers

Authors	Title	Year	BPM Lifecycle					
			⇕Process Identification	⇕Process Discovery	⇕Process Analysis	⇕Process Re-design	⇕Process Implementation	⇕Process Monitoring
⇕	⇕	⇕						
Aa filter data...	Aa	Aa	Aa	Aa	Aa	Aa	Aa	Aa
Mustansir A., Shahzad K., Malik M.K.	Towards automatic business process redesign: An NLP based approach to	2022				x		

The heatmap shows the number of papers intersecting in the two selected dimensions.
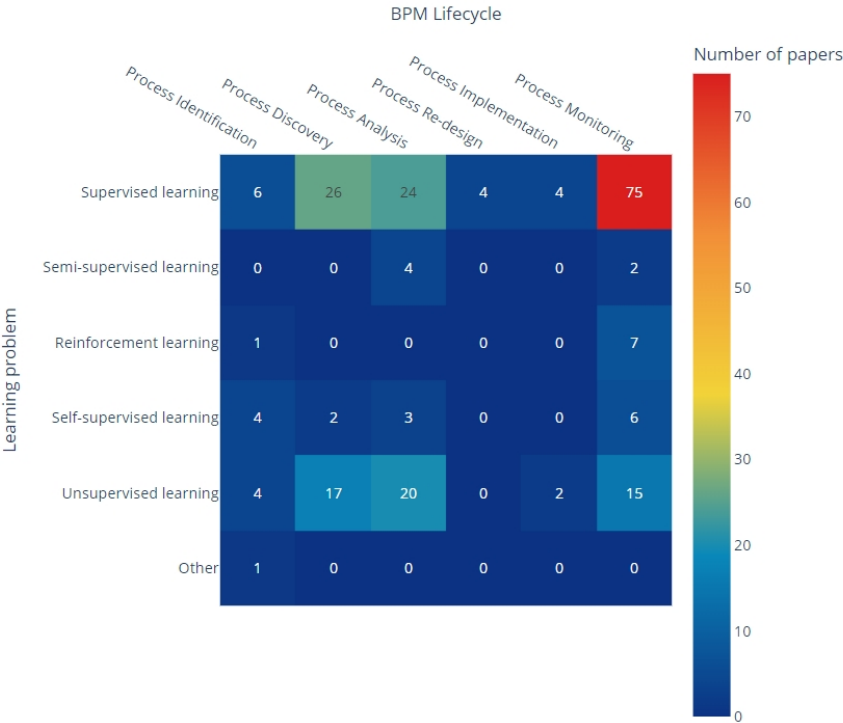
Select the first dimension

BPM Lifecycle ▾

Select the second dimension

Learning problem ▾

Click a cell on the heatmap to get the information of selected papers in the table below.

BPM Lifecycle

	Process Identification	Process Discovery	Process Analysis	Process Re-design	Process Implementation	Process Monitoring
Supervised learning	6	26	24	4	4	75
Semi-supervised learning	0	0	4	0	0	2
Reinforcement learning	1	0	0	0	0	7
Self-supervised learning	4	2	3	0	0	6
Unsupervised learning	4	17	20	0	2	15
Other	1	0	0	0	0	0

Learning problem

Number of papers (70, 60, 50, 40, 30, 20, 10, 0)

Clear table filter

Intersection of these two dimension: *BPM Lifecycle: Process Identification* AND *Learning problem: Self-supervised learning*

Authors	Title	Year
Aa	filter data...	Aa
Guzzo A., Joaristi M., Rullo A., Serra E.	A multi-perspective approach for the analysis of complex business processes behavior	2021

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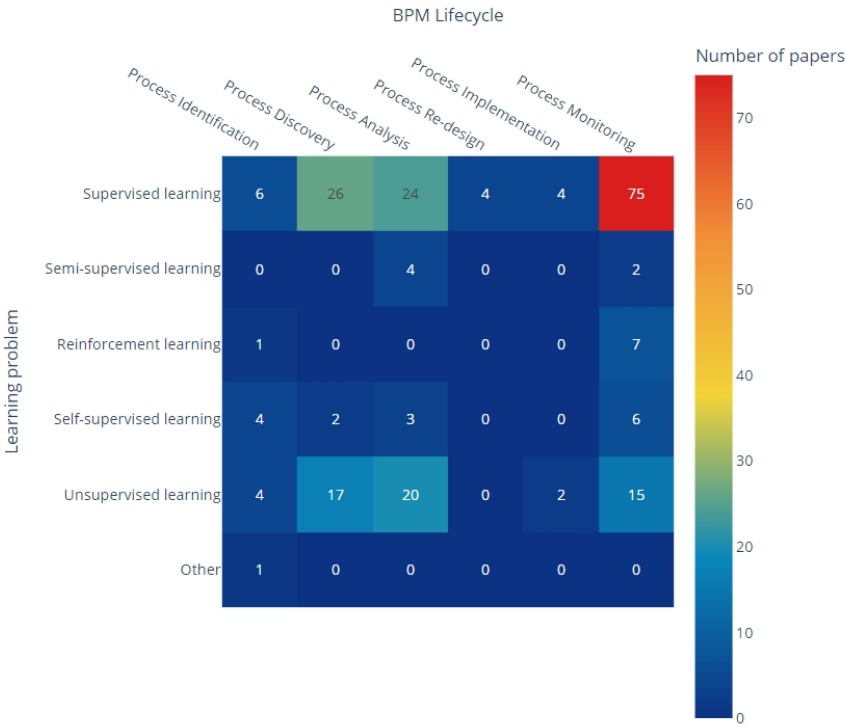
Select the first dimension

BPM Lifecycle ▼

Select the second dimension

Learning problem ▼

Click a cell on the heatmap to get the information of selected papers in the table below.

BPM Lifecycle

Number of papers

Learning problem \ BPM Lifecycle	Process Identification	Process Discovery	Process Analysis	Process Re-design	Process Implementation	Process Monitoring
Supervised learning	6	26	24	4	4	75
Semi-supervised learning	0	0	4	0	0	2
Reinforcement learning	1	0	0	0	0	7
Self-supervised learning	4	2	3	0	0	6
Unsupervised learning	4	17	20	0	2	15
Other	1	0	0	0	0	0

Clear table filter

All papers

Authors	Title	Year

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FOR MACHINE LEARNING IN BUSINESS PROCESS MANAGEMENT

The heatmap shows the number of papers intersecting in the two selected dimensions.
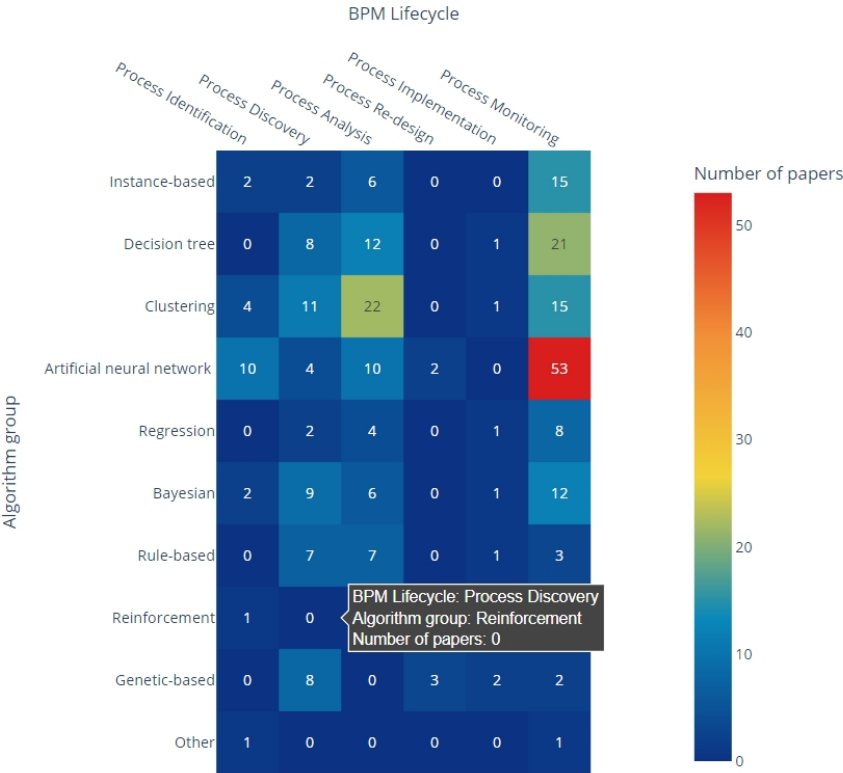
Select the first dimension

BPM Lifecycle ▼

Select the second dimension

Algorithm group ▼

Click a cell on the heatmap to get the information of selected papers in the table below.

BPM Lifecycle

Algorithm group	Process Identification	Process Discovery	Process Analysis	Process Re-design	Process Implementation	Process Monitoring
Instance-based	2	2	6	0	0	15
Decision tree	0	8	12	0	1	21
Clustering	4	11	22	0	1	15
Artificial neural network	10	4	10	2	0	53
Regression	0	2	4	0	1	8
Bayesian	2	9	6	0	1	12
Rule-based	0	7	7	0	1	3
Reinforcement	1	0				
Genetic-based	0	8	0	3	2	2
Other	1	0	0	0	0	1

BPM Lifecycle: Process Discovery
Algorithm group: Reinforcement
Number of papers: 0

Number of papers

50
40
30
20
10
0

Clear table filter

All papers

Authors	Title	Year

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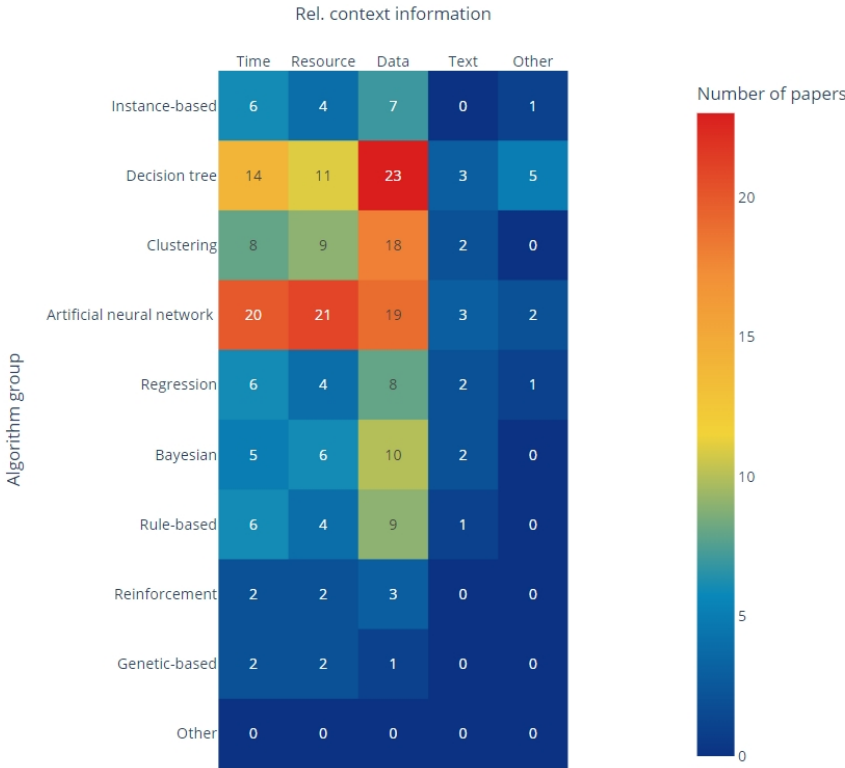The heatmap shows the number of papers intersecting in the two selected dimensions.

Select the first dimension

Rel. context information ▼

Select the second dimension

Algorithm group ▼

Click a cell on the heatmap to get the information of selected papers in the table below.

Rel. context information

Algorithm group	Time	Resource	Data	Text	Other
Instance-based	6	4	7	0	1
Decision tree	14	11	23	3	5
Clustering	8	9	18	2	0
Artificial neural network	20	21	19	3	2
Regression	6	4	8	2	1
Bayesian	5	6	10	2	0
Rule-based	6	4	9	1	0
Reinforcement	2	2	3	0	0
Genetic-based	2	2	1	0	0
Other	0	0	0	0	0

Number of papers

20

15

10

5

0

[Clear table filter]

All papers

Authors	Title	Year

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Clear table filter

Authors	Title	Year	Paper information			Research Method				
			Name of outlet	Volume	Number	Reference	Data type	Number of datasets	Name of Dataset	Sta
filter data...	Aa	Aa	Aa	Aa	Aa	Aa	Aa	Aa	Aa	Aa
Mustansir A., Shahzad K., Malik M.K.	Towards automatic business process redesign: An NLP based approach to extract redesign suggestions	2022	Automated Software Engineering	29	1		Real-world	3	Own	
Lu Y., Chen Q., Poon S.K.	A deep learning approach for repairing missing activity labels in event logs for process mining	2022	Information (Switzerland)	13	5		Real-world	6	Production, Hospital Billing, BPIC2012, Sepsis, Helpdesk, BPIC2013	
Djordjevic M.Z., Djordjevic A., Klochkova E., Misic M.	Application of modern digital systems and approaches to business process management	2022	Sustainability (Switzerland)	14	3		Real-world	30	Different SME data sets	
Sim S., Sutrisnowati R.A., Won S., Lee S., Bae H.	Automatic conversion of event data to event logs using CNN and event density embedding	2022	IEEE Access	10			Real-world	9	BPIC2012-BPIC2018, Steel processing, port logistics	
Alves R.M., Barbieri L., Stroeh K., Peres S.M., Madeira E.R.M.	Context-aware completion time prediction for business process monitoring	2022	OTM Confederated International Conferences "On the Move to Meaningful Internet Systems"				Real-world	3	Incident, BPIC2013, WFM	
Weinzierl S., Wolf V., Pauli T., Beverungen D., Matzner M.	Detecting temporal workarounds in business processes – A deep-learning-based method for analysing event log data	2022	Journal of Business Analytics	5	1	x	modified Real-world	4	BPIC2012, BPIC2013, BPIC2019, BPIC2020	