Mobile Health Lierature Survey

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1 Introduction

This document shows the result of a survey on "Mobile Health Optimization", which tries to find and classify all publications for this concept. It is based on a manually collected bibfile containing reference to relevant papers and articles, and on an automatic and manual analysis of local copies of the cited papers. For copyright reasons, we are obviously not able to distribute the collected copies, but we provide links to the original sources of the files.

We identify the papers by a key which is the last name of the first author, the first character of the last names of all other authors, and a two digit year code for the date of publication. If multiple works would define the same key, we differentiate by adding a suffix "a", "b", etc, to the second and subsequent works found.

Most of the content of this document is generated by a Java program that parses the bib files, adds any manually extracted information, and which then extracts concept occurrences from the local copies of the works. It then produces tables and other LaTeX artifacts that are included in a manually defined top-level document.

To add new works, first add bibtex entries for each work in the main `mobilehealth/bib.bib` file, then add local copies of the pdf of the work to the `mobilehealth/works/` directory, using the key of the bibtex entry as the file name (plus extension .pdf), and then run the main Java program `org.insightcentre.pthg24.JfxApp` to consolidate the information and extract the relevant concepts. Finally, run `pdflatex` on the `overview/mobilehealth.tex` file to produce this pdf document. Manually extracted information for the files can be added in the `mobilehealth/imports/manual.csv` file. New concepts can be added in the file `mobilehealth/imports/concepts.json`, new concept types need to be directly defined in the Java code.

We start the document by providing a table of all defined keys in the bib file in alphabetical order. This table can be helpful to see if a candidate paper is already in the survey, it suffices to see if the key is already present, and matches the authors, title and origin of the candidate paper. In the table link given by the key points to the local copy of the file, while the citation number links to the bibliography entry. That entry typically also contains a link to the original source of the paper.

This document heavily depends on the use of hyper links in the document, it has been tested with Acrobat Reader, other pdf reader may not use links in the same way.

Table 1: Key Overview (Total: 70)

1	2	3	4	5	6
AbazariAR21 [1]	AhmadiJavidSS17 [2]	AnderssonGCSL20 [3]	AnderssonV07 [4]	AringhieriBKE17 [5]	Barneveld16 [64]
BelangerKRS16 [6]	BelangerLNRS20 [7]	BelangerRS19 [8]	BharsakadeMNNP23 [9]	BoutilierC20 [10]	BrotcorneLS03 [11]
ChenY16 [12]	ChurchR74 [13]	ComberSSB11 [14]	Daskin83 [15]	DaskinS81 [16]	ErkutIE08 [17]
FarahaniAHHG12 [18]	FrichiJAB22 [19]	GaoZARL17 [20]	GendreauLS01 [22]	GendreauLS06 [23]	GendreauLS97 [21]
GunesMN19 [24]	HasanH17 [25]	HasanH21 [26]	HashemiJY22 [27]	HatamiMarbiniVSK22 [28]	Hentenryck22 [65]
JiaOD07 [29]	KazemipoorSSA21 [30]	KeikhosrokianiMZS12 [31]	KhoshgehbariM23 [32]	Larson74 [33]	Larson75 [34]
LeeCC22 [35]	LeknesAACG17 [36]	LiZH12 [38]	LiZZW11 [37]	LiuCZ19 [39]	MaxwellHT13 [40]
MaxwellRHT10 [41]	MccormackC15 [42]	MemariTNJ20 [43]	MukhopadhyayPVL22 [44]	NadarJT21 [45]	NadarJT22 [46]
NadarJT23 [47]	NeiraRodadoEWM22 [48]	Nguyen15 [62]	OngCNSLLOTCTY10 [49]	PillacVE14 [50]	RajagopalanSX08 [51]
RawlsT10 [52]	ReVelle89 [55]	ReVelleH89 [56]	RepedeB94 [53]	ReuterBV17 [54]	SchjolbergBPSM23 [57]
Schmid12 [58]	StratmanBA23 [59]	TalaricoMS15 [60]	TavakkoliMT18 [61]	ToregasSRB71 [63]	WangS23 [67]
WangWWZQ21 [68]	WangWY22 [66]	ZhenWHC14 [69]	ZhiKM15 [70]		

2 Conference Paper List

This section presents the information for all conference papers included in the survey. For space reasons, not all information about the papers can be presented in a single table, we therefore split the data into three parts. The first part contains the main bibliographical information for the paper. The paper are sorted by year of publication (newest first), and then alphabetically by key.

The key contains a hyperlink to the original source URL of the paper. You may have to navigate manually to download the actual paper content, and you may be unable to access the paper completely if it is behind a paywall for which you (or your organization) do not have access.

We then list the authors of the paper, in the other given in the bibtex file, abbreviating first names for space where we can identify them. Note that names with non-latin characters are not handled by latex. We use the form that is given in the bibtex file, but have excluded entries that cause latex to fail.

We then give the title of the publication, using the original capitalization of the title entry in the bibtex entry, which may differ from the format shown in the bibliography. We then (column LC) provide a link to a local copy, if it is present, and a link to the bibliography entry of the paper. We also show the year of publication, and the conference where the paper was published, using a short form abbreviation of the conference. This relies on a matching routine in the Java code to find the short title, new conference series may require an additional entry in `ImportBibtex.java` to work properly. Finally we list the number of pages of the paper, this information is using the bibtex entry where possible, otherwise uses `pdfinfo` to extract the actual number of pages from the local copy. The final columns b and c provide links to the corresponding tables of extracted concepts and manual information. Note that the links to typically show the correct page, not do not necessarily scroll to the correct line in the table.

2.1 Papers from bibtex

Table 2: Works from bibtex (Total 4)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
SchjolbergBPSM23 SchjolbergBPSM23	Magnus Eide Schjølberg, Nicklas Paus Bekkevold, X. Sánchez-Díaz, Ole Jakob Mengshoel	Comparing Metaheuristic Optimization Algorithms for Ambulance Allocation: An Experimental Simulation Study	Yes	[57]	2023	GECCO 2023	10	0	43	7	9
Hentenryck22 Hentenryck22	Pascal Van Hentenryck	Computational disaster management	Yes	[65]	2022	IJCAI 2022	7	0	0	6	10
TavakkoliMT18 TavakkoliMT18	R. Tavakkoli-Moghaddam, P. Memari, E. Talebi	A bi-objective location-allocation problem of temporary emergency stations and ambulance routing in a disaster situation	Yes	[61]	2018	ICOA 2018	4	4	15	8	11
HasanH17 HasanH17	Mohd. Hafiz Hasan, Pascal Van Hentenryck	A Column-Generation Algorithm for Evacuation Planning with Elementary Paths	Yes	[25]	2017	CP 2017	16	2	14	5	12

2.2 Extracted Concepts

Table 3: Automatically Extracted PAPER Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
HasanH17 [25]	16		Schedule, EPP	Element constraint, cycle, cumulative		Gurobi	natural disaster, wildfire, hurricane, evacuation, evacuation planning, emergency service		real-life, real-world	column generation	4	12
Hentenryck22 [65]	7	scheduling	Schedule			OPL	response time, hurricane, evacuation planning, cyclone, department of homeland security, flood evacuation, power network, evacuation, blackout, power network restoration, relief distribution, disaster management, tsunami, natural disaster, humanitarian aid, network restoration		benchmark	max-flow, column generation, large neighborhood search, machine learning	2	10

Table 3: Automatically Extracted PAPER Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
SchjolbergBPSM23 [57]	10	scheduling, multi-objective, home health care, ambulance location problem, geographic information system		cycle	Java	OPL	emergency medical service, response time, medical, ambulance allocation, patient, drone, nurse, cardiac arrest		real-life, benchmark, real-world	meta heuristic, genetic algorithm, machine learning, discrete event simulation, evolutionary computing, memetic algorithm, reinforcement learning, k-means	1	9
TavakkoliMT18 [61]	4	scheduling, multi-objective, bi-objective				OPL	hurricane, response time, medical, disaster management, natural disaster, earthquake, emergency medical service, tsunami, patient			genetic algorithm, meta heuristic	3	11

2.3 Manually Defined Fields

Table 4: Manually Defined PAPER Properties

Key	Title (Local Copy)	CP System	Bench	Links	Data Avail	Sol Avail	Code Avail	Related To	Classification	Constraints	a	b
SchjolbergBPSM23 SchjolbergBPSM23 [57]	Comparing Metaheuristic Optimization Algorithms for Ambulance Allocation: An Experimental Simulation Study		real-life, benchmark, real-world	7							1	7
Hentenryck22 Hentenryck22 [65]	Computational disaster management		benchmark	0							2	6
TavakkoliMT18 TavakkoliMT18 [61]	A bi-objective location-allocation problem of temporary emergency stations and ambulance routing in a disaster situation			0							3	8
HasanH17 HasanH17 [25]	A Column-Generation Algorithm for Evacuation Planning with Elementary Paths		real-life, real-world	0							4	5

3 Journal Articles

3.1 Articles from bibtex

Table 5: Works from bibtex (Total 61)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
KhoshgehbariM23 KhoshgehbariM23	F. Khoshgehbari, S. Mohammad J. Mirzapour Al-e-Hashem	Ambulance location routing problem considering all sources of uncertainty: Progressive estimating algorithm	No	[32]	2023	Computers Operations Research	1	0	63	No	106
NadarJT23 NadarJT23	Raviarun A. Nadar, J. Jha, Jitesh J. Thakkar	Adaptive variable neighbourhood search approach for time-dependent joint location and dispatching problem in a multi-tier ambulance system	No	[47]	2023	Computers Operations Research	1	0	51	No	107
WangS23 WangS23	S. Wang, B. Sun	Model of multi-period emergency material allocation for large-scale sudden natural disasters in humanitarian logistics: Efficiency, effectiveness and equity	Yes	[67]	2023	International Journal of Disaster Risk Reduction	20	2	40	102	108
FrichiJAB22 FrichiJAB22	Y. Frichi, F. Jawab, L. Aboueljinane, S. Boutahari	Development and comparison of two new multi-period queueing reliability models using discrete-event simulation and a simulation–optimization approach	No	[19]	2022	Computers Industrial Engineering	1	6	52	No	109
HashemiJY22 HashemiJY22	Seyed Emadedin Hashemi, M. Jabbari, P. Yaghoubi	A mathematical optimization model for location Emergency Medical Service (EMS) centers using contour lines	Yes	[27]	2022	Healthcare Analytics	13	5	42	85	110
HatamiMarbiniVSK22 HatamiMarbiniVSK22	A. Hatami-Marbini, N. Varzgani, Seyed Mojtaba Sajadi, A. Kamali	An emergency medical services system design using mathematical modeling and simulation-based optimization approaches	No	[28]	2022	Decision Analytics Journal	1	4	70	No	111
LeeCC22 LeeCC22	Y. Lee, Y. Chen, Albert Y. Chen	Lagrangian dual decomposition for the ambulance relocation and routing considering stochastic demand with the truncated Poisson	No	[35]	2022	Transportation Research Part B: Methodological	null	7	45	No	112
MukhopadhyayPVL22 MukhopadhyayPVL22	A. Mukhopadhyay, G. Pettet, Sayyed Mohsen Vazirizade, D. Lu, A. Jaimes, Said El Said, H. Baroud, Y. Vorobeychik, M. Kochenderfer, A. Dubey	A Review of Incident Prediction, Resource Allocation, and Dispatch Models for Emergency Management	No	[44]	2022	Accident Analysis Prevention	1	12	148	No	113
NadarJT22 NadarJT22	Raviarun A. Nadar, J. Jha, Jitesh J. Thakkar	Ambulance location under temporal variation in demand using a mixed coded memetic algorithm	Yes	[46]	2022	RAIRO - Operations Research	31	1	73	96	114
NeiraRodadoEWM22 NeiraRodadoEWM22	D. Neira-Rodado, John Wilmer Escobar-Velasquez, S. McClean	Ambulances Deployment Problems: Categorization, Evolution and Dynamic Problems Review	No	[48]	2022	ISPRS International Journal of Geo-Information	1	8	144	No	115
WangWY22 WangWY22	J. Wang, Y. Wang, M. Yu	A multi-period ambulance location and allocation problem in the disaster	Yes	[66]	2022	Journal of Combinatorial Optimization	24	3	33	103	116
AbazariAR21 AbazariAR21	Seyed Reza Abazari, A. Aghsami, M. Rabbani	Prepositioning and distributing relief items in humanitarian logistics with uncertain parameters	Yes	[1]	2021	Socio-Economic Planning Sciences	17	46	43	74	117
HasanH21 HasanH21	Mohd. Hafiz Hasan, Pascal Van Hentenryck	Large-scale zone-based evacuation planning, Part II: Macroscopic and microscopic evaluations	Yes	[26]	2021	Networks	18	6	10	84	118
KazemipoorSSA21 KazemipoorSSA21	H. Kazemipoor, Mohammad Ebrahim Sadeghi, A. Szmelter-Jarosz, M. Aghabozorgi	Providing a model for the issue of multi-period ambulance location	Yes	[30]	2021	International Journal of Innovation in Engineering	11	0	0	87	119
NadarJT21 NadarJT21	Raviarun A. Nadar, J. Jha, Jitesh J. Thakkar	Strategic location of ambulances under temporal variation in demand and travel time using variable neighbourhood search based approach	No	[45]	2021	Computers Industrial Engineering	1	4	34	No	120
WangWWZQ21 WangWWZQ21	W. Wang, S. Wu, S. Wang, L. Zhen, X. Qu	Emergency facility location problems in logistics: Status and perspectives	No	[68]	2021	Transportation Research Part E: Logistics and Transportation Review	1	29	128	No	121
AnderssonGCSL20 AnderssonGCSL20	H. Andersson, Tobias Andersson Granberg, M. Christiansen, Eirik Skorge Aartun, H. Leknes	Using optimization to provide decision support for strategic emergency medical service planning – Three case studies	Yes	[3]	2020	International Journal of Medical Informatics	10	18	36	75	122

Table 5: Works from bibtex (Total 61)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
BelangerLNRS20 BelangerLNRS20	V. Bélanger, E. Lanzarone, V. Nicoletta, A. Ruiz, P. Soriano	A recursive simulation-optimization framework for the ambulance location and dispatching problem	No	[7]	2020	European Journal of Operational Research	null	27	57	No	123
BoutilierC20 BoutilierC20	Justin J. Boutilier, Timothy C. Y. Chan	Ambulance Emergency Response Optimization in Developing Countries	Yes	[10]	2020	Operations Research	20	40	63	78	124
MemariTNJ20 MemariTNJ20	P. Memari, R. Tavakkoli-Moghaddam, F. Navazi, F. Jolai	Air and ground ambulance location-allocation-routing problem for designing a temporary emergency management system after a disaster	Yes	[43]	2020	Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine	17	11	42	95	125
BelangerRS19 BelangerRS19	V. Bélanger, A. Ruiz, P. Soriano	Recent optimization models and trends in location, relocation, and dispatching of emergency medical vehicles	Yes	[8]	2019	European Journal of Operational Research	23	119	98	77	126
LiuCZ19 LiuCZ19	Y. Liu, N. Cui, J. Zhang	Integrated temporary facility location and casualty allocation planning for post-disaster humanitarian medical service	Yes	[39]	2019	Transportation Research Part E: Logistics and Transportation Review	16	75	50	91	127
AhmadiJavidSS17 AhmadiJavidSS17	A. Ahmadi-Javid, P. Seyedi, Siddhartha S. Syam	A survey of healthcare facility location	No	[2]	2017	Computers Operations Research	null	285	184	No	128
AringhieriBKE17 AringhieriBKE17	R. Aringhieri, M. Bruni, S. Khodaparasti, J.T. van Essen	Emergency medical services and beyond: Addressing new challenges through a wide literature review	No	[5]	2017	Computers Operations Research	null	179	169	No	129
GaoZARL17 GaoZARL17	X. Gao, Y. Zhou, Muhammad Idil Haq Amir, Fifi Alfiana Rosyidah, Gyu M Lee	A HYBRID GENETIC ALGORITHM FOR MULTI-EMERGENCY MEDICAL SERVICE CENTER LOCATION-ALLOCATION PROBLEM IN DISASTER RESPONSE	Yes	[20]	2017		17	0	0	83	130
LeknesAACG17 LeknesAACG17	H. Leknes, Eirik Skorge Aartun, H. Andersson, M. Christiansen, Tobias Andersson Granberg	Strategic ambulance location for heterogeneous regions	Yes	[36]	2017	European Journal of Operational Research	12	36	32	89	131
ReuterBV17 ReuterBV17	M. Reuter-Oppermann, Pieter L. van den Berg, Julie L. Vile	Logistics for Emergency Medical Service systems	No	[54]	2017	Health Systems	null	58	61	No	132
Barneveld16 Barneveld16	Thije van Barneveld	The Minimum Expected Penalty Relocation Problem for the Computation of Compliance Tables for Ambulance Vehicles	No	[64]	2016	INFORMS Journal on Computing	null	18	31	No	133
BelangerKRS16 BelangerKRS16	V. Bélanger, Y. Kergosien, A. Ruiz, P. Soriano	An empirical comparison of relocation strategies in real-time ambulance fleet management	Yes	[6]	2016	Computers Industrial Engineering	14	37	33	76	134
ChenY16 ChenY16	Albert Y. Chen, T. Yu	Network based temporary facility location for the Emergency Medical Services considering the disaster induced demand and the transportation infrastructure in disaster response	Yes	[12]	2016	Transportation Research Part B: Methodological	16	87	53	80	135
MccormackC15 MccormackC15	R. McCormack, G. Coates	A simulation model to enable the optimization of ambulance fleet allocation and base station location for increased patient survival	Yes	[42]	2015	European Journal of Operational Research	16	68	43	94	136
TalaricoMS15 TalaricoMS15	L. Talarico, F. Meisel, K. Sörensen	Ambulance routing for disaster response with patient groups	Yes	[60]	2015	Computers Operations Research	14	79	38	101	137
ZhiKM15 ZhiKM15	J. Zhi, Burcu B. Keskin, Sharif H. Melouk	A multi-period dynamic location planning model for emergency response	Yes	[70]	2015	IIE Transactions on Healthcare Systems Engineering	14	3	30	105	138
ZhenWHC14 ZhenWHC14	L. Zhen, K. Wang, H. Hu, D. Chang	A simulation optimization framework for ambulance deployment and relocation problems	Yes	[69]	2014	Computers Industrial Engineering	12	57	20	104	139
MaxwellHT13 MaxwellHT13	Matthew S. Maxwell, Shane G. Henderson, H. Topaloglu	Tuning Approximate Dynamic Programming Policies for Ambulance Redeployment via Direct Search	Yes	[40]	2013	Stochastic Systems	40	21	29	92	140
FarahaniAHHG12 FarahaniAHHG12	Reza Zanjirani Farahani, N. Asgari, N. Heidari, M. Hosseininia, M. Goh	Covering problems in facility location: A review	No	[18]	2012	Computers Industrial Engineering	null	429	148	No	141

Table 5: Works from bibtex (Total 61)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
KeikhosrokianiMZS12 KeikhosrokianiMZS12	P. Keikhosrokiani, N. Mustaffa, N. Zakaria, Muhammad Imran Sarwar	A Proposal to Design a Location-Based Mobile Cardiac Emergency System (LMCES)	Yes	[31]	2012		10	0	0	88	142
LiZH12 LiZH12	Zhen Xiang Li, Hai Feng Zhao, Guan Wei Huang	The Emergency Medical Service Facilities Location and Scheduling in the Earthquake Disaster	Yes	[38]	2012	Applied Mechanics and Materials	8	0	10	90	143
Schmid12 Schmid12	V. Schmid	Solving the dynamic ambulance relocation and dispatching problem using approximate dynamic programming	Yes	[58]	2012	European Journal of Operational Research	11	194	18	100	144
ComberSSB11 ComberSSB11	Alexis J. Comber, S. Sasaki, H. Suzuki, C. Brunsdon	A modified grouping genetic algorithm to select ambulance site locations	Yes	[14]	2011	International Journal of Geographical Information Science	17	19	51	81	145
LiZZW11 LiZZW11	X. Li, Z. Zhao, X. Zhu, T. Wyatt	Covering models and optimization techniques for emergency response facility location and planning: a review	No	[37]	2011	Mathematical Methods of Operations Research	null	250	85	No	146
MaxwellRHT10 MaxwellRHT10	Matthew S. Maxwell, M. Restrepo, Shane G. Henderson, H. Topaloglu	Approximate Dynamic Programming for Ambulance Redeployment	Yes	[41]	2010	INFORMS Journal on Computing	16	190	26	93	147
OngCNSLLOTCTY10 OngCNSLLOTCTY10	Marcus Eng Hock Ong, Tut Fu Chiam, Faith Suan Peng Ng, P. Sultana, Swee Han Lim, Benjamin Sieu-Hon Leong, Victor Yeok Kein Ong, Elaine Ching Ching Tan, Lai Peng Tham, S. Yap, V. Anantharaman	Reducing Ambulance Response Times Using Geospatial–Time Analysis of Ambulance Deployment	Yes	[49]	2010	Academic Emergency Medicine	7	37	24	97	148
RawlsT10 RawlsT10	Carmen G. Rawls, Mark A. Turnquist	Pre-positioning of emergency supplies for disaster response	Yes	[52]	2010	Transportation Research Part B: Methodological	14	561	16	99	149
ErkutIE08 ErkutIE08	E. Erkut, A. Ingolfsson, G. Erdoğan	Ambulance location for maximum survival	Yes	[17]	2008	Naval Research Logistics (NRL)	17	156	31	82	150
RajagopalanSX08 RajagopalanSX08	Hari K. Rajagopalan, C. Saydam, J. Xiao	A multiperiod set covering location model for dynamic redeployment of ambulances	Yes	[51]	2008	Computers Operations Research	13	230	32	98	151
AnderssonV07 AnderssonV07	T. Andersson, P. Värbrand	Decision support tools for ambulance dispatch and relocation	No	[4]	2007	Journal of the Operational Research Society	null	146	12	No	152
JiaOD07 JiaOD07	H. Jia, F. Ordóñez, M. Dessouky	A modeling framework for facility location of medical services for large-scale emergencies	Yes	[29]	2007	IIE Transactions	15	310	50	86	153
GendreauLS06 GendreauLS06	M. Gendreau, G. Laporte, F. Semet	The maximal expected coverage relocation problem for emergency vehicles	No	[23]	2006	Journal of the Operational Research Society	null	140	19	No	154
BrotcorneLS03 BrotcorneLS03	L. Brotcorne, G. Laporte, F. Semet	Ambulance location and relocation models	Yes	[11]	2003	European Journal of Operational Research	13	512	31	79	155
GendreauLS01 GendreauLS01	M. Gendreau, G. Laporte, F. Semet	A dynamic model and parallel tabu search heuristic for real-time ambulance relocation	No	[22]	2001	Parallel Computing	null	300	9	No	156
GendreauLS97 GendreauLS97	M. Gendreau, G. Laporte, F. Semet	Solving an ambulance location model by tabu search	No	[21]	1997	Location Science	null	247	21	No	157
RepedeB94 RepedeB94	John F. Repede, John J. Bernardo	Developing and validating a decision support system for locating emergency medical vehicles in Louisville, Kentucky	No	[53]	1994	European Journal of Operational Research	null	156	31	No	158
ReVelle89 ReVelle89	C. ReVelle	Review, extension and prediction in emergency service siting models	No	[55]	1989	European Journal of Operational Research	null	95	13	No	159
ReVelleH89 ReVelleH89	C. ReVelle, K. Hogan	The Maximum Availability Location Problem	No	[56]	1989	Transportation Science	null	291	0	No	160
Daskin83 Daskin83	Mark S. Daskin	A Maximum Expected Covering Location Model: Formulation, Properties and Heuristic Solution	No	[15]	1983	Transportation Science	null	557	0	No	161
DaskinS81 DaskinS81	Mark S. Daskin, Edmund H. Stern	A Hierarchical Objective Set Covering Model for Emergency Medical Service Vehicle Deployment	No	[16]	1981	Transportation Science	null	245	0	No	162

Table 5: Works from bibtex (Total 61)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
Larson75 Larson75	Richard C. Larson	Approximating the Performance of Urban Emergency Service Systems	No	[34]	1975	Operations Research	null	256	0	No	163
ChurchR74 ChurchR74	R. Church, C. ReVelle	The maximal covering location problem	No	[13]	1974	Papers of the Regional Science Association	null	1664	9	No	164
Larson74 Larson74	Richard C. Larson	A hypercube queuing model for facility location and redistricting in urban emergency services	No	[33]	1974	Computers Operations Research	null	431	11	No	165
ToregasSRB71 ToregasSRB71	C. Toregas, R. Swain, C. ReVelle, L. Bergman	The Location of Emergency Service Facilities	No	[63]	1971	Operations Research	null	1197	0	No	166

3.2 Extracted Concepts

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
AbazariAR21 [1]	17	bi-objective, Pareto, multi-objective	Facility location			CPO, OPL, Cplex	earthquake, hurricane, evacuation, humanitarian aid, medical, response time, disaster management, natural disaster		real-world, real-life	particle swarm, swarm intelligence, variable neighborhood search, Lagrangian relaxation, MINLP, meta heuristic	24	117
AnderssonGCSL20 [3]	10	ambulance location problem	MEXCLP, MCLP, Facility location	cumulative	Python	OPL	emergency medical service, response time, physician, emergency service, ambulance allocation, medical, patient, cardiac arrest		real-world	discrete event simulation	29	122
BelangerKRS16 [6]	14	multi period double standard, ambulance location problem, multi-objective	MEXCLP, Facility location			Cplex	emergency service, physician, response time, medical, emergency medical service, patient, ambulance redeployment		real-life, random instance	tabu search, dynamic programming	41	134

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
BelangerRS19 [8]	23	multi-objective, bi-objective, scheduling, ambulance location problem, maximal expected covering, location set covering	Facility location, MALP, MEXCLP, MCLP			Cplex, OPL	ambulance allocation, patient, emergency service, medical, response time, emergency medical service, physician, ambulance redeployment, cardiac arrest		random instance, benchmark, real-life	genetic algorithm, discrete event simulation, tabu search, simulated annealing, meta heuristic, ant colony, variable neighborhood search, dynamic programming	33	126
BoutilierC20 [10]	20	sustainability, bi-objective	Facility location, Schedule, MALP, MCLP	cumulative, cycle	Python	OPL, Gurobi	patient, robot, emergency service, medical, response time, emergency medical service, surgery, ambulance redeployment, cardiac arrest		real-world	machine learning, meta heuristic, dynamic programming	31	124
BrotcorneLS03 [11]	13	ambulance location problem, maximal expected covering, dynamic double standard, location set covering, geographic information system	MCLP, MEXCLP, MALP, LSCM, Facility location			Cplex	response time, medical, emergency service, emergency medical service, patient, ambulance redeployment		real-life	tabu search, meta heuristic	62	155

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
ChenY16 [12]	16	multi-objective	Facility location			Cplex, OPL	railway, response time, natural disaster, emergency medical service, evacuation, pipeline, earthquake, patient, disaster management, medical, cardiac arrest		benchmark	meta heuristic, ant colony, k-medoid, Lagrangian relaxation	42	135
ComberSSB11 [14]	17	ambulance location problem, multi-objective, maximal expected covering, geographic information system	Facility location	cycle		OPL	medical, emergency service, response time, emergency medical service, patient, cardiac arrest		real-world	machine learning, simulated annealing, ant colony, genetic algorithm	52	145
ErkutIE08 [17]	17	maximal expected covering	MCLP, MEXCLP, Facility location	cycle		OPL, Cplex	emergency service, patient, emergency medical service, response time, medical, cardiac arrest		benchmark		57	150
GaoZARL17 [20]	17	bi-objective, multi-objective, telemedicine	Facility location			OPL	surgery, nurse, automotive, emergency service, earthquake, patient, emergency medical service, natural disaster, medical		real-world	genetic algorithm, tabu search, k-medoid, k-means	37	130
HasanH21 [26]	18	scheduling, multi-objective	Schedule, EPP, CPG			Gurobi	evacuation, evacuation planning, emergency service		real-life, real-world	column generation	25	118

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
HashemiJY22 [27]	13	scheduling, bi-objective, Pareto, ambulance location problem, multi-objective, location set covering, dynamic double standard, reliable emergency location, home health care, maximal expected covering, multi period double standard, tandem equipment allocation, geographic information system	MALP, MCLP, Facility location, LSCM, MEXCLP			OPL	nurse, drone, ambulance allocation, medical, emergency service, response time, natural disaster, COVID, emergency medical service, earthquake, patient		real-life, real-world	tabu search, genetic algorithm, meta heuristic, ant colony, particle swarm	17	110
JiaOD07 [29]	15	maximal expected covering, scheduling, location set covering	MCLP, Facility location, MALP, MEXCLP			Cplex, OPL	response time, natural disaster, emergency medical service, vaccine, earthquake, patient, hurricane, department of homeland security, emergency service, medical		real-world		60	153
KazemipoorSSA21 [30]	11	ambulance location problem	MALP, Facility location		C++, Python	OPL, Cplex	patient, medical, natural disaster, emergency medical service, response time, physician, emergency service, relief distribution, ambulance redeployment	pharmaceutica industry	real-world	genetic algorithm, meta heuristic, variable neighborhood search	26	119

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
KeikhosrokianiMZS12 [31]	10	telemedicine				OPL	patient, emergency medical service, emergency service, physician, medical			genetic algorithm	49	142
LeknesAACG17 [36]	12	scheduling, location set covering	MEXCLP, Facility location	cumulative	Python	OPL	emergency service, crew-scheduling, medical, response time, emergency medical service, ambulance allocation, patient, cardiac arrest			genetic algorithm, discrete event simulation	38	131
LiZH12 [38]	8	multi-objective, scheduling, Pareto	Facility location			OPL	earthquake, typhoon, tsunami, emergency medical service, emergency service, natural disaster, medical			genetic algorithm, simulated annealing	50	143
LiuCZ19 [39]	16	scheduling, bi-objective, multi-objective, Pareto	Facility location, Schedule			Cplex, OPL	response time, natural disaster, emergency medical service, evacuation, earthquake, patient, hurricane, humanitarian aid, medical		real-life, supplementary material	column generation, large neighborhood search, meta heuristic	34	127

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
MaxwellHT13 [40]	40						patient, medical, response time, emergency medical service, ambulance redeployment		benchmark	discrete event simulation, reinforcement learning, tabu search, neural network, machine learning, dynamic programming	47	140
MaxwellRHT10 [41]	16	geographic information system	Schedule	cumulative, cycle			response time, emergency medical service, medical, robot, patient, ambulance redeployment		benchmark	reinforcement learning, neural network, tabu search, dynamic programming	54	147
MccormackC15 [42]	16	multi-objective, geographic information system	MEXCLP, MCLP, Facility location		C++		medical, response time, emergency medical service, ambulance allocation, patient, emergency service, ambulance redeployment, cardiac arrest		real-life	machine learning, genetic algorithm, tabu search, meta heuristic, dynamic programming	43	136

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
MemariTNJ20 [43]	17	scheduling, bi-objective, Pareto, multi-objective	Facility location			OPL	operating room, emergency medical service, earthquake, patient, nurse, humanitarian aid, ambulance allocation, medical, natural disaster, emergency service, response time, disaster management			genetic algorithm, variable neighborhood search, GRASP, MINLP, meta heuristic	32	125
NadarJT22 [46]	31	bi-objective, Pareto, maximal expected covering, location set covering, energy efficiency, scheduling, home health care, ambulance location problem, multi-objective	Schedule, MALP, MCLP, MEXCLP, Facility location, LSCM			Cplex, OPL	emergency service, railway, patient, response time, crew-scheduling, emergency medical service, medical, ambulance allocation, cardiac arrest		real-life, Roadef, generated instance	MINLP, simulated annealing, memetic algorithm, genetic algorithm, ant colony, meta heuristic, tabu search	21	114
OngCNSLLOTCTY10 [49]	7	geographic information system	Schedule, OOHCA	cycle		OPL	satellite, emergency medical service, evacuation, response time, physician, medical, patient, pipeline, cardiac arrest, heart arrest				55	148

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
RajagopalanSX08 [51]	13	Pareto, multi-objective, location set covering, dynamic double standard, maximal expected covering, scheduling	Facility location, Schedule, MALP, MEXCLP	cumulative	Java	Cplex	response time, emergency service, medical, patient, emergency medical service		benchmark, real-life	meta heuristic, genetic algorithm, simulated annealing, tabu search	58	151
RawlsT10 [52]	14		Schedule, Facility location	circuit, cumulative	C++	Cplex	natural disaster, hurricane, tornado, medical, cyclone, earthquake, disaster management			Lagrangian relaxation	56	149
Schmid12 [58]	11	ambulance location problem	EPP				patient, response time, medical, emergency service, ambulance redeployment		benchmark, real-world	meta heuristic, tabu search, reinforcement learning, dynamic programming	51	144
TalaricoMS15 [60]	14	scheduling, multi-objective, ambulance location problem	Facility location			Cplex, OPL	ambulance allocation, earthquake, evacuation, patient, disaster management, tsunami, wildfire, automotive, response time, hurricane, emergency medical service, medical		benchmark	genetic algorithm, large neighborhood search, tabu search, meta heuristic, dynamic programming	44	137

Table 6: Automatically Extracted ARTICLE Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
WangS23 [67]	20	scheduling, bi-objective, multi-objective, sustainability	Facility location			Lingo, OPL	relief distribution, evacuation, earthquake, tsunami, hurricane, medical, humanitarian aid, typhoon, natural disaster			particle swarm, ant colony	15	108
WangWY22 [66]	24	location set covering, bi-objective, multi-objective	MEXCLP, Facility location, MCLP			OPL	patient, response time, medical, evacuation, evacuation planning, ambulance allocation, earthquake, emergency service, disaster management, emergency medical service			genetic algorithm, particle swarm, tabu search, meta heuristic, simulated annealing	23	116
ZhenWHC14 [69]	12	scheduling, ambulance location problem			C	OPL, Cplex	medical, patient, response time, emergency medical service, ambulance redeployment		generated instance	genetic algorithm, meta heuristic, tabu search, discrete event simulation, dynamic programming	46	139
ZhiKM15 [70]	14	bi-objective, ambulance location problem	Facility location, LSCM, MCLP	cycle		Cplex	evacuation, patient, emergency service, medical, ambulance allocation, response time, emergency medical service, ambulance redeployment		real-world	variable neighborhood search, tabu search, dynamic programming	45	138

3.3 Manually Defined Fields

Table 7: Manually Defined ARTICLE Properties

Key	Title (Local Copy)	CP System	Bench	Links	Data Avail	Sol Avail	Code Avail	Related To	Classification	Constraints	a	b
KhoshgehbariM23 KhoshgehbariM23 [32]	Ambulance location routing problem considering all sources of uncertainty: Progressive estimating algorithm			0							13	No
NadarJT23 NadarJT23 [47]	Adaptive variable neighbourhood search approach for time-dependent joint location and dispatching problem in a multi-tier ambulance system			0							14	No
WangS23 WangS23 [67]	Model of multi-period emergency material allocation for large-scale sudden natural disasters in humanitarian logistics: Efficiency, effectiveness and equity			10							15	102
FrichiJAB22 FrichiJAB22 [19]	Development and comparison of two new multi-period queueing reliability models using discrete-event simulation and a simulation–optimization approach			0							16	No
HashemiJY22 HashemiJY22 [27]	A mathematical optimization model for location Emergency Medical Service (EMS) centers using contour lines		real-life, real-world	0							17	85
HatamiMarbiniVSK22 Hatami-MarbiniVSK22 [28]	An emergency medical services system design using mathematical modeling and simulation-based optimization approaches			0							18	No
LeeCC22 LeeCC22 [35]	Lagrangian dual decomposition for the ambulance relocation and routing considering stochastic demand with the truncated Poisson			0							19	No
MukhopadhyayPVL22 Mukhopad-hyayPVL22 [44]	A Review of Incident Prediction, Resource Allocation, and Dispatch Models for Emergency Management			0							20	No
NadarJT22 NadarJT22 [46]	Ambulance location under temporal variation in demand using a mixed coded memetic algorithm		real-life, Roadef, generated instance	4							21	96
NeiraRodadoEWM22 NeiraRoda-doEWM22 [48]	Ambulances Deployment Problems: Categorization, Evolution and Dynamic Problems Review			0							22	No
WangWY22 WangWY22 [66]	A multi-period ambulance location and allocation problem in the disaster			2							23	103
AbazariAR21 AbazariAR21 [1]	Prepositioning and distributing relief items in humanitarian logistics with uncertain parameters		real-world, real-life	6							24	74
HasanH21 HasanH21 [26]	Large-scale zone-based evacuation planning, Part II: Macroscopic and microscopic evaluations		real-life, real-world	16							25	84
KazemipoorSSA21 KazemipoorSSA21 [30]	Providing a model for the issue of multi-period ambulance location		real-world	0							26	87
NadarJT21 NadarJT21 [45]	Strategic location of ambulances under temporal variation in demand and travel time using variable neighbourhood search based approach			0							27	No
WangWWZQ21 WangWWZQ21 [68]	Emergency facility location problems in logistics: Status and perspectives			0							28	No
AnderssonGCSL20 AnderssonGCSL20 [3]	Using optimization to provide decision support for strategic emergency medical service planning – Three case studies		real-world	4							29	75

Table 7: Manually Defined ARTICLE Properties

Key	Title (Local Copy)	CP System	Bench	Links	Data Avail	Sol Avail	Code Avail	Related To	Classification	Constraints	a	b
BelangerLNRS20 BelangerLNRS20 [7]	A recursive simulation-optimization framework for the ambulance location and dispatching problem			0							30	No
BoutilierC20 BoutilierC20 [10]	Ambulance Emergency Response Optimization in Developing Countries		real-world	6							31	78
MemariTNJ20 MemariTNJ20 [43]	Air and ground ambulance location-allocation-routing problem for designing a temporary emergency management system after a disaster			2							32	95
BelangerRS19 BelangerRS19 [8]	Recent optimization models and trends in location, relocation, and dispatching of emergency medical vehicles		random instance, benchmark, real-life	0							33	77
LiuCZ19 LiuCZ19 [39]	Integrated temporary facility location and casualty allocation planning for post-disaster humanitarian medical service		real-life, supplementary material	14							34	91
AhmadiJavidSS17 AhmadiJavidSS17 [2]	A survey of healthcare facility location			0							35	No
AringhieriBKE17 AringhieriBKE17 [5]	Emergency medical services and beyond: Addressing new challenges through a wide literature review			0							36	No
GaoZARL17 GaoZARL17 [20]	A HYBRID GENETIC ALGORITHM FOR MULTI-EMERGENCY MEDICAL SERVICE CENTER LOCATION-ALLOCATION PROBLEM IN DISASTER RESPONSE		real-world	1							37	83
LeknesAACG17 LeknesAACG17 [36]	Strategic ambulance location for heterogeneous regions			0							38	89
ReuterBV17 ReuterBV17 [54]	Logistics for Emergency Medical Service systems			0							39	No
Barneveld16 Barneveld16 [64]	The Minimum Expected Penalty Relocation Problem for the Computation of Compliance Tables for Ambulance Vehicles			0							40	No
BelangerKRS16 BelangerKRS16 [6]	An empirical comparison of relocation strategies in real-time ambulance fleet management		real-life, random instance	4							41	76
ChenY16 ChenY16 [12]	Network based temporary facility location for the Emergency Medical Services considering the disaster induced demand and the transportation infrastructure in disaster response		benchmark	3							42	80
MccormackC15 MccormackC15 [42]	A simulation model to enable the optimization of ambulance fleet allocation and base station location for increased patient survival		real-life	0							43	94
TalaricoMS15 TalaricoMS15 [60]	Ambulance routing for disaster response with patient groups		benchmark	0							44	101
ZhiKM15 ZhiKM15 [70]	A multi-period dynamic location planning model for emergency response		real-world	7							45	105
ZhenWHC14 ZhenWHC14 [69]	A simulation optimization framework for ambulance deployment and relocation problems		generated instance	0							46	104
MaxwellHT13 MaxwellHT13 [40]	Tuning Approximate Dynamic Programming Policies for Ambulance Redeployment via Direct Search		benchmark	1							47	92
FarahaniAHHG12 FarahaniAHHG12 [18]	Covering problems in facility location: A review			0							48	No
KeikhosrokianiMZS12 KeikhosrokianiMZS12 [31]	A Proposal to Design a Location-Based Mobile Cardiac Emergency System (LMCES)			0							49	88

Table 7: Manually Defined ARTICLE Properties

Key	Title (Local Copy)	CP System	Bench	Links	Data Avail	Sol Avail	Code Avail	Related To	Classification	Constraints	a	b
LiZH12 LiZH12 [38]	The Emergency Medical Service Facilities Location and Scheduling in the Earthquake Disaster			1							50	90
Schmid12 Schmid12 [58]	Solving the dynamic ambulance relocation and dispatching problem using approximate dynamic programming		benchmark, real-world	0							51	100
ComberSSB11 ComberSSB11 [14]	A modified grouping genetic algorithm to select ambulance site locations		real-world	9							52	81
LiZZW11 LiZZW11 [37]	Covering models and optimization techniques for emergency response facility location and planning: a review			0							53	No
MaxwellRHT10 MaxwellRHT10 [41]	Approximate Dynamic Programming for Ambulance Redeployment		benchmark	1							54	93
OngCNSLLOTCTY10 OngC-NSLLOTCTY10 [49]	Reducing Ambulance Response Times Using Geospatial–Time Analysis of Ambulance Deployment			0							55	97
RawlsT10 RawlsT10 [52]	Pre-positioning of emergency supplies for disaster response			2							56	99
ErkutIE08 ErkutIE08 [17]	Ambulance location for maximum survival		benchmark	0							57	82
RajagopalanSX08 RajagopalanSX08 [51]	A multiperiod set covering location model for dynamic redeployment of ambulances		benchmark, real-life	0							58	98
AnderssonV07 AnderssonV07 [4]	Decision support tools for ambulance dispatch and relocation			0							59	No
JiaOD07 JiaOD07 [29]	A modeling framework for facility location of medical services for large-scale emergencies		real-world	2							60	86
GendreauLS06 GendreauLS06 [23]	The maximal expected coverage relocation problem for emergency vehicles			0							61	No
BrotcorneLS03 BrotcorneLS03 [11]	Ambulance location and relocation models		real-life	0							62	79
GendreauLS01 GendreauLS01 [22]	A dynamic model and parallel tabu search heuristic for real-time ambulance relocation			0							63	No
GendreauLS97 GendreauLS97 [21]	Solving an ambulance location model by tabu search			0							64	No
RepedeB94 RepedeB94 [53]	Developing and validating a decision support system for locating emergency medical vehicles in Louisville, Kentucky			0							65	No
ReVelle89 ReVelle89 [55]	Review, extension and prediction in emergency service siting models			0							66	No
ReVelleH89 ReVelleH89 [56]	The Maximum Availability Location Problem			0							67	No
Daskin83 Daskin83 [15]	A Maximum Expected Covering Location Model: Formulation, Properties and Heuristic Solution			0							68	No
DaskinS81 DaskinS81 [16]	A Hierarchical Objective Set Covering Model for Emergency Medical Service Vehicle Deployment			0							69	No
Larson75 Larson75 [34]	Approximating the Performance of Urban Emergency Service Systems			0							70	No
ChurchR74 ChurchR74 [13]	The maximal covering location problem			0							71	No
Larson74 Larson74 [33]	A hypercube queuing model for facility location and redistricting in urban emergency services			0							72	No
ToregasSRB71 ToregasSRB71 [63]	The Location of Emergency Service Facilities			0							73	No

4 Authors

Table 8: Co-Authors of Articles/Papers

Author	Nr Works	Nr Cites	Entries
Gilbert Laporte	4	1199	GendreauLS06 [23], BrotcorneLS03 [11], GendreauLS01 [22], GendreauLS97 [21]
Charles ReVelle	4	3247	ReVelleH89 [56], ReVelle89 [55], ChurchR74 [13], ToregasSRB71 [63]
Frédéric Semet	4	1199	GendreauLS06 [23], BrotcorneLS03 [11], GendreauLS01 [22], GendreauLS97 [21]
Pascal Van Hentenryck	4	14	Hentenryck22 [65], HasanH21 [26], HasanH17 [25], PillacVE14 [50]
Raviarun A. Nadar	3	5	NadarJT23 [47], NadarJT22 [46], NadarJT21 [45]
V. Bélanger	3	183	BelangerLNRS20 [7], BelangerRS19 [8], BelangerKRS16 [6]
Michel Gendreau	3	687	GendreauLS06 [23], GendreauLS01 [22], GendreauLS97 [21]
Jitesh J. Thakkar	3	5	NadarJT23 [47], NadarJT22 [46], NadarJT21 [45]
J.K. Jha	3	5	NadarJT23 [47], NadarJT22 [46], NadarJT21 [45]
A. Ruiz	3	183	BelangerLNRS20 [7], BelangerRS19 [8], BelangerKRS16 [6]
P. Soriano	3	183	BelangerLNRS20 [7], BelangerRS19 [8], BelangerKRS16 [6]
Henrik Andersson	2	54	AnderssonGCSL20 [3], LeknesAACG17 [36]
Tobias Andersson Granberg	2	54	AnderssonGCSL20 [3], LeknesAACG17 [36]
Richard C. Larson	2	687	Larson75 [34], Larson74 [33]
Marielle Christiansen	2	54	AnderssonGCSL20 [3], LeknesAACG17 [36]
Shane G. Henderson	2	211	MaxwellHT13 [40], MaxwellRHT10 [41]
Mohd. Hafiz Hasan	2	8	HasanH21 [26], HasanH17 [25]
Justin J. Boutilier	2	40	StratmanBA23 [59], BoutilierC20 [10]
Håkon Leknes	2	54	AnderssonGCSL20 [3], LeknesAACG17 [36]
Pedram Memari	2	15	MemariTNJ20 [43], TavakkoliMT18 [61]
Matthew S. Maxwell	2	211	MaxwellHT13 [40], MaxwellRHT10 [41]
Mark S. Daskin	2	802	Daskin83 [15], DaskinS81 [16]
Eirik Skorge Aartun	2	54	AnderssonGCSL20 [3], LeknesAACG17 [36]
Reza Tavakkoli-Moghaddam	2	15	MemariTNJ20 [43], TavakkoliMT18 [61]
Huseyin Topaloglu	2	211	MaxwellHT13 [40], MaxwellRHT10 [41]
Albert Y. Chen	2	94	LeeCC22 [35], ChenY16 [12]
Lu Zhen	2	86	WangWWZQ21 [68], ZhenWHC14 [69]
Mark A. Turnquist	1	561	RawlsT10 [52]
Laura A. Albert	1	0	StratmanBA23 [59]
Lina Aboueljinane	1	6	FrichiJAB22 [19]
Mohadese Aghabozorgi	1	0	KazemipoorSSA21 [30]
Amir Aghsami	1	46	AbazariAR21 [1]
Amir Ahmadi-Javid	1	285	AhmadiJavidSS17 [2]
Fifi Alfiana Rosyidah	1	0	GaoZARL17 [20]
V. Anantharaman	1	37	OngCNSLLOTCTY10 [49]
T Andersson	1	146	AnderssonV07 [4]
R. Aringhieri	1	179	AringhieriBKE17 [5]
Nasrin Asgari	1	429	FarahaniAHHG12 [18]
Burcu B. Keskin	1	3	ZhiKM15 [70]
Hiba Baroud	1	12	MukhopadhyayPVL22 [44]
Lawrence Bergman	1	1197	ToregasSRB71 [63]
Ramkrishna Bharsakade	1	0	BharsakadeMNNP23 [9]
Said Boutahari	1	6	FrichiJAB22 [19]
Luce Brotcorne	1	512	BrotcorneLS03 [11]
M.E. Bruni	1	179	AringhieriBKE17 [5]
Chris Brunsdon	1	19	ComberSSB11 [14]
Timothy C. Y. Chan	1	40	BoutilierC20 [10]
Daofang Chang	1	57	ZhenWHC14 [69]
Yu-Shih Chen	1	7	LeeCC22 [35]
Elaine Ching Ching Tan	1	37	OngCNSLLOTCTY10 [49]
Richard Church	1	1664	ChurchR74 [13]

Table 8: Co-Authors of Articles/Papers

Author	Nr Works	Nr Cites	Entries
Graham Coates	1	68	MccormackC15 [42]
Na Cui	1	75	LiuCZ19 [39]
Maged Dessouky	1	310	JiaOD07 [29]
Evrim Didem Güneş	1	8	GunesMN19 [24]
Abhishek Dubey	1	12	MukhopadhyayPVL22 [44]
Mohammad Ebrahim Sadeghi	1	0	KazemipoorSSA21 [30]
Magnus Eide Schjølberg	1	0	SchjolbergBPSM23 [57]
Said El Said	1	12	MukhopadhyayPVL22 [44]
Seyed Emadedin Hashemi	1	5	HashemiJY22 [27]
Marcus Eng Hock Ong	1	37	OngCNSLLOTCTY10 [49]
Güneş Erdoğan	1	156	ErkutIE08 [17]
Erhan Erkut	1	156	ErkutIE08 [17]
Caroline Even	1	6	PillacVE14 [50]
John F. Repede	1	156	RepedeB94 [53]
Hai Feng Zhao	1	0	LiZH12 [38]
Youness Frichi	1	6	FrichiJAB22 [19]
Tut Fu Chiam	1	37	OngCNSLLOTCTY10 [49]
Carmen G. Rawls	1	561	RawlsT10 [52]
Eric G. Stratman	1	0	StratmanBA23 [59]
Xuehong Gao	1	0	GaoZARL17 [20]
Mark Goh	1	429	FarahaniAHHG12 [18]
Sharif H. Melouk	1	3	ZhiKM15 [70]
Edmund H. Stern	1	245	DaskinS81 [16]
Swee Han Lim	1	37	OngCNSLLOTCTY10 [49]
Adel Hatami-Marbini	1	4	HatamiMarbiniVSK22 [28]
Nooshin Heidari	1	429	FarahaniAHHG12 [18]
Kathleen Hogan	1	291	ReVelleH89 [56]
Mahtab Hosseininia	1	429	FarahaniAHHG12 [18]
Hongtao Hu	1	57	ZhenWHC14 [69]
Muhammad Idil Haq Amir	1	0	GaoZARL17 [20]
Muhammad Imran Sarwar	1	0	KeikhosrokianiMZS12 [31]
Armann Ingolfsson	1	156	ErkutIE08 [17]
Alexis J. Comber	1	19	ComberSSB11 [14]
John J. Bernardo	1	156	RepedeB94 [53]
Mona Jabbari	1	5	HashemiJY22 [27]
Alejandro Jaimes	1	12	MukhopadhyayPVL22 [44]
Ole Jakob Mengshoel	1	0	SchjolbergBPSM23 [57]
Fouad Jawab	1	6	FrichiJAB22 [19]
Hongzhong Jia	1	310	JiaOD07 [29]
Fariborz Jolai	1	11	MemariTNJ20 [43]
Hari K. Rajagopalan	1	230	RajagopalanSX08 [51]
Ahmad Kamali	1	4	HatamiMarbiniVSK22 [28]
Hamed Kazemipoor	1	0	KazemipoorSSA21 [30]
Pantea Keikhosrokiani	1	0	KeikhosrokianiMZS12 [31]
Y. Kergosien	1	37	BelangerKRS16 [6]
S. Khodaparasti	1	179	AringhieriBKE17 [5]
Farnaz Khoshgehbari	1	0	KhoshgehbariM23 [32]
Mykel Kochenderfer	1	12	MukhopadhyayPVL22 [44]
Pieter L. van den Berg	1	58	ReuterBV17 [54]
Julie L. Vile	1	58	ReuterBV17 [54]
E. Lanzarone	1	27	BelangerLNRS20 [7]
Yu-Ching Lee	1	7	LeeCC22 [35]
Xueping Li	1	250	LiZZW11 [37]
Yang Liu	1	75	LiuCZ19 [39]
Di Lu	1	12	MukhopadhyayPVL22 [44]

Table 8: Co-Authors of Articles/Papers

Author	Nr Works	Nr Cites	Entries
Gyu M Lee	1	0	GaoZARL17 [20]
Sally McClean	1	8	NeiraRodadoEWM22 [48]
Richard McCormack	1	68	MccormackC15 [42]
Frank Meisel	1	79	TalaricoMS15 [60]
Teresa Melo	1	8	GunesMN19 [24]
S. Mohammad J. Mirzapour Al-e-Hashem	1	0	KhoshgehbariM23 [32]
Sayyed Mohsen Vazirizade	1	12	MukhopadhyayPVL22 [44]
Seyed Mojtaba Sajadi	1	4	HatamiMarbiniVSK22 [28]
Sejal More	1	0	BharsakadeMNNP23 [9]
Ayan Mukhopadhyay	1	12	MukhopadhyayPVL22 [44]
Norlia Mustaffa	1	0	KeikhosrokianiMZS12 [31]
Sharwari Nandeshwar	1	0	BharsakadeMNNP23 [9]
Rahul Narnaware	1	0	BharsakadeMNNP23 [9]
Fatemeh Navazi	1	11	MemariTNJ20 [43]
Dionicio Neira-Rodado	1	8	NeiraRodadoEWM22 [48]
Stefan Nickel	1	8	GunesMN19 [24]
V. Nicoletta	1	27	BelangerLNRS20 [7]
Fernando Ordóñez	1	310	JiaOD07 [29]
Raj Patil	1	0	BharsakadeMNNP23 [9]
Nicklas Paus Bekkevold	1	0	SchjolbergBPSM23 [57]
Lai Peng Tham	1	37	OngCNSLLOTCTY10 [49]
Geoffrey Pettet	1	12	MukhopadhyayPVL22 [44]
Victor Pillac	1	6	PillacVE14 [50]
Xiaobo Qu	1	29	WangWWZQ21 [68]
Masoud Rabbani	1	46	AbazariAR21 [1]
Mateo Restrepo	1	190	MaxwellRHT10 [41]
Melanie Reuter-Oppermann	1	58	ReuterBV17 [54]
Seyed Reza Abazari	1	46	AbazariAR21 [1]
Siddhartha S. Syam	1	285	AhmadiJavidSS17 [2]
Satoshi Sasaki	1	19	ComberSSB11 [14]
Cem Saydam	1	230	RajagopalanSX08 [51]
Verena Schmid	1	194	Schmid12 [58]
Pardis Seyedi	1	285	AhmadiJavidSS17 [2]
Benjamin Sieu-Hon Leong	1	37	OngCNSLLOTCTY10 [49]
Faith Suan Peng Ng	1	37	OngCNSLLOTCTY10 [49]
Papia Sultana	1	37	OngCNSLLOTCTY10 [49]
B.Q. Sun	1	2	WangS23 [67]
Hiroshi Suzuki	1	19	ComberSSB11 [14]
Ralph Swain	1	1197	ToregasSRB71 [63]
Agnieszka Szmelter-Jarosz	1	0	KazemipoorSSA21 [30]
Kenneth Sörensen	1	79	TalaricoMS15 [60]
Xavier Sánchez-Díaz	1	0	SchjolbergBPSM23 [57]
Luca Talarico	1	79	TalaricoMS15 [60]
Ehsan Talebi	1	4	TavakkoliMT18 [61]
Ngoc-Hien Thi Nguyen	1	1	Nguyen15 [62]
Constantine Toregas	1	1197	ToregasSRB71 [63]
P Värbrand	1	146	AnderssonV07 [4]
Nilofar Varzgani	1	4	HatamiMarbiniVSK22 [28]
Yevgeniy Vorobeychik	1	12	MukhopadhyayPVL22 [44]
Kai Wang	1	57	ZhenWHC14 [69]
Jian Wang	1	3	WangWY22 [66]
Yin Wang	1	3	WangWY22 [66]
S.L. Wang	1	2	WangS23 [67]
Wei Wang	1	29	WangWWZQ21 [68]

Table 8: Co-Authors of Articles/Papers

Author	Nr Works	Nr Cites	Entries
Shuaian Wang	1	29	WangWWZQ21 [68]
Guan Wei Huang	1	0	LiZH12 [38]
John Wilmer Escobar-Velasquez	1	8	NeiraRodadoEWM22 [48]
Shining Wu	1	29	WangWWZQ21 [68]
Tami Wyatt	1	250	LiZZW11 [37]
Zhen Xiang Li	1	0	LiZH12 [38]
Jing Xiao	1	230	RajagopalanSX08 [51]
Parisa Yaghoubi	1	5	HashemiJY22 [27]
Susan Yap	1	37	OngCNSLLOTCTY10 [49]
Victor Yeok Kein Ong	1	37	OngCNSLLOTCTY10 [49]
Ting-Yi Yu	1	87	ChenY16 [12]
Mingzhu Yu	1	3	WangWY22 [66]
Nasriah Zakaria	1	0	KeikhosrokianiMZS12 [31]
Reza Zanjirani Farahani	1	429	FarahaniAHHG12 [18]
Jianghua Zhang	1	75	LiuCZ19 [39]
Zhaoxia Zhao	1	250	LiZZW11 [37]
Jianing Zhi	1	3	ZhiKM15 [70]
Yanjie Zhou	1	0	GaoZARL17 [20]
Xiaoyan Zhu	1	250	LiZZW11 [37]
J.T. van Essen	1	179	AringhieriBKE17 [5]
Thije van Barneveld	1	18	Barneveld16 [64]

5 Most Cited Works

Table 9: Works from bibtex (Total 30)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
ChurchR74 ChurchR74	R. Church, C. ReVelle	The maximal covering location problem	No	[13]	1974	Papers of the Regional Science Association	null	1664	9	No	164
ToregasSRB71 ToregasSRB71	C. Toregas, R. Swain, C. ReVelle, L. Bergman	The Location of Emergency Service Facilities	No	[63]	1971	Operations Research	null	1197	0	No	166
RawlsT10 RawlsT10	Carmen G. Rawls, Mark A. Turnquist	Pre-positioning of emergency supplies for disaster response	Yes	[52]	2010	Transportation Research Part B: Methodological	14	561	16	99	149
Daskin83 Daskin83	Mark S. Daskin	A Maximum Expected Covering Location Model: Formulation, Properties and Heuristic Solution	No	[15]	1983	Transportation Science	null	557	0	No	161
BrotcorneLS03 BrotcorneLS03	L. Brotcorne, G. Laporte, F. Semet	Ambulance location and relocation models	Yes	[11]	2003	European Journal of Operational Research	13	512	31	79	155
Larson74 Larson74	Richard C. Larson	A hypercube queuing model for facility location and redistricting in urban emergency services	No	[33]	1974	Computers Operations Research	null	431	11	No	165
FarahaniAHHG12 FarahaniAHHG12	Reza Zanjirani Farahani, N. Asgari, N. Heidari, M. Hosseininia, M. Goh	Covering problems in facility location: A review	No	[18]	2012	Computers Industrial Engineering	null	429	148	No	141
JiaOD07 JiaOD07	H. Jia, F. Ordóñez, M. Dessouky	A modeling framework for facility location of medical services for large-scale emergencies	Yes	[29]	2007	IIE Transactions	15	310	50	86	153
GendreauLS01 GendreauLS01	M. Gendreau, G. Laporte, F. Semet	A dynamic model and parallel tabu search heuristic for real-time ambulance relocation	No	[22]	2001	Parallel Computing	null	300	9	No	156
ReVelleH89 ReVelleH89	C. ReVelle, K. Hogan	The Maximum Availability Location Problem	No	[56]	1989	Transportation Science	null	291	0	No	160
AhmadiJavidSS17 AhmadiJavidSS17	A. Ahmadi-Javid, P. Seyedi, Siddhartha S. Syam	A survey of healthcare facility location	No	[2]	2017	Computers Operations Research	null	285	184	No	128
Larson75 Larson75	Richard C. Larson	Approximating the Performance of Urban Emergency Service Systems	No	[34]	1975	Operations Research	null	256	0	No	163
LiZZW11 LiZZW11	X. Li, Z. Zhao, X. Zhu, T. Wyatt	Covering models and optimization techniques for emergency response facility location and planning: a review	No	[37]	2011	Mathematical Methods of Operations Research	null	250	85	No	146
GendreauLS97 GendreauLS97	M. Gendreau, G. Laporte, F. Semet	Solving an ambulance location model by tabu search	No	[21]	1997	Location Science	null	247	21	No	157
DaskinS81 DaskinS81	Mark S. Daskin, Edmund H. Stern	A Hierarchical Objective Set Covering Model for Emergency Medical Service Vehicle Deployment	No	[16]	1981	Transportation Science	null	245	0	No	162
RajagopalanSX08 RajagopalanSX08	Hari K. Rajagopalan, C. Saydam, J. Xiao	A multiperiod set covering location model for dynamic redeployment of ambulances	Yes	[51]	2008	Computers Operations Research	13	230	32	98	151
Schmid12 Schmid12	V. Schmid	Solving the dynamic ambulance relocation and dispatching problem using approximate dynamic programming	Yes	[58]	2012	European Journal of Operational Research	11	194	18	100	144
MaxwellRHT10 MaxwellRHT10	Matthew S. Maxwell, M. Restrepo, Shane G. Henderson, H. Topaloglu	Approximate Dynamic Programming for Ambulance Redeployment	Yes	[41]	2010	INFORMS Journal on Computing	16	190	26	93	147
AringhieriBKE17 AringhieriBKE17	R. Aringhieri, M. Bruni, S. Khodaparasti, J.T. van Essen	Emergency medical services and beyond: Addressing new challenges through a wide literature review	No	[5]	2017	Computers Operations Research	null	179	169	No	129
ErkutIE08 ErkutIE08	E. Erkut, A. Ingolfsson, G. Erdoğan	Ambulance location for maximum survival	Yes	[17]	2008	Naval Research Logistics (NRL)	17	156	31	82	150
RepedeB94 RepedeB94	John F. Repede, John J. Bernardo	Developing and validating a decision support system for locating emergency medical vehicles in Louisville, Kentucky	No	[53]	1994	European Journal of Operational Research	null	156	31	No	158

Table 9: Works from bibtex (Total 30)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
AnderssonV07 AnderssonV07	T. Andersson, P. Värbrand	Decision support tools for ambulance dispatch and relocation	No	[4]	2007	Journal of the Operational Research Society	null	146	12	No	152
GendreauLS06 GendreauLS06	M. Gendreau, G. Laporte, F. Semet	The maximal expected coverage relocation problem for emergency vehicles	No	[23]	2006	Journal of the Operational Research Society	null	140	19	No	154
BelangerRS19 BelangerRS19	V. Bélanger, A. Ruiz, P. Soriano	Recent optimization models and trends in location, relocation, and dispatching of emergency medical vehicles	Yes	[8]	2019	European Journal of Operational Research	23	119	98	77	126
ReVelle89 ReVelle89	C. ReVelle	Review, extension and prediction in emergency service siting models	No	[55]	1989	European Journal of Operational Research	null	95	13	No	159
ChenY16 ChenY16	Albert Y. Chen, T. Yu	Network based temporary facility location for the Emergency Medical Services considering the disaster induced demand and the transportation infrastructure in disaster response	Yes	[12]	2016	Transportation Research Part B: Methodological	16	87	53	80	135
TalaricoMS15 TalaricoMS15	L. Talarico, F. Meisel, K. Sörensen	Ambulance routing for disaster response with patient groups	Yes	[60]	2015	Computers Operations Research	14	79	38	101	137
LiuCZ19 LiuCZ19	Y. Liu, N. Cui, J. Zhang	Integrated temporary facility location and casualty allocation planning for post-disaster humanitarian medical service	Yes	[39]	2019	Transportation Research Part E: Logistics and Transportation Review	16	75	50	91	127
MccormackC15 MccormackC15	R. McCormack, G. Coates	A simulation model to enable the optimization of ambulance fleet allocation and base station location for increased patient survival	Yes	[42]	2015	European Journal of Operational Research	16	68	43	94	136
ReuterBV17 ReuterBV17	M. Reuter-Oppermann, Pieter L. van den Berg, Julie L. Vile	Logistics for Emergency Medical Service systems	No	[54]	2017	Health Systems	null	58	61	No	132

6 Problem Classification

7 Concept Matching

In order to automatically find out properties of the articles, we try to find certain concepts in the pdf versions of the articles. We manually defined an ontology of important concepts to look for, and defined regular expressions that would recognize these concepts in the text. We use the *pdfgrep* command to search for the number of occurrences of certain regular expressions in the files. This often clearly identifies the constraints used in the model. We group the results by number of occurrences of the concept in the text of the work. Note that this is only approximate, as we do include the full pdf file in the search. A concept might only be mentioned in some of the title of citations used in the paper, we do count them in our results, as we were not able to remove the bibliography from the main body of the work.

Overall, if a work is not mentioned as using the concept, the the text does not contain a match to the corresponding regular expression. A fundamental limitation of this approach is that it only really works for text written in the language the regular expressions are designed for (in our case English), and not those written in another language. We could overcome this limitation by defining all concepts in other languages as well, and then using a language flag to identify the language the text is written in.

Note that we only show the first 30 matching entries in each concept category, and list the total number of matches if there are more than 30 matches.

7.1 Concept Type Concepts

Table 10: Works for Concepts of Type Concepts

Type	Keyword	High	Medium	Low
Concepts	Pareto	MemariTNJ20 [43], LiuCZ19 [39], LiZH12 [38]	AbazariAR21 [1]	NadarJT22 [46], HashemiJY22 [27], RajagopalanSX08 [51]
Concepts	ambulance location problem	HashemiJY22 [27], NadarJT22 [46], BelangerRS19 [8]	TalaricoMS15 [60], Schmid12 [58], ComberSSB11 [14]	SchjolbergBPSM23 [57], KazemipoorSSA21 [30], AnderssonGCSL20 [3], BelangerKRS16 [6], ZhiKM15 [70], ZhenWHC14 [69], BrotcorneLS03 [11]
Concepts	bi-objective	LiuCZ19 [39]	NadarJT22 [46], MemariTNJ20 [43], BelangerRS19 [8], TavakkoliMT18 [61], GaoZARL17 [20]	WangS23 [67], HashemiJY22 [27], WangWY22 [66], AbazariAR21 [1], BoutilierC20 [10], ZhiKM15 [70]
Concepts	dynamic double standard			HashemiJY22 [27], RajagopalanSX08 [51], BrotcorneLS03 [11]
Concepts	energy efficiency			NadarJT22 [46]
Concepts	geo-spatial time analysis			
Concepts	geographic information system		OngCNSLLOTCTY10 [49]	SchjolbergBPSM23 [57], HashemiJY22 [27], MccormackC15 [42], ComberSSB11 [14], MaxwellRHT10 [41], BrotcorneLS03 [11]
Concepts	home health care			SchjolbergBPSM23 [57], NadarJT22 [46], HashemiJY22 [27]
Concepts	location set covering		BelangerRS19 [8], RajagopalanSX08 [51], BrotcorneLS03 [11]	NadarJT22 [46], WangWY22 [66], HashemiJY22 [27], LeknesAACG17 [36], JiaOD07 [29]
Concepts	maximal expected covering		ErkutIE08 [17], RajagopalanSX08 [51]	NadarJT22 [46], HashemiJY22 [27], BelangerRS19 [8], ComberSSB11 [14], JiaOD07 [29], BrotcorneLS03 [11]
Concepts	multi period double standard			HashemiJY22 [27], BelangerKRS16 [6]
Concepts	multi-objective	WangS23 [67], AbazariAR21 [1], MemariTNJ20 [43], LiZH12 [38]	HashemiJY22 [27], NadarJT22 [46], BelangerRS19 [8], LiuCZ19 [39], TavakkoliMT18 [61], GaoZARL17 [20], BelangerKRS16 [6], ComberSSB11 [14]	SchjolbergBPSM23 [57], WangWY22 [66], HasanH21 [26], ChenY16 [12], MccormackC15 [42], TalaricoMS15 [60], RajagopalanSX08 [51]
Concepts	reliable emergency location			HashemiJY22 [27]
Concepts	scheduling	NadarJT22 [46], LiuCZ19 [39], PillacVE14 [50]	WangS23 [67], HasanH21 [26], TalaricoMS15 [60], ZhenWHC14 [69], LiZH12 [38], JiaOD07 [29]	SchjolbergBPSM23 [57], Hentenryck22 [65], HashemiJY22 [27], MemariTNJ20 [43], BelangerRS19 [8], TavakkoliMT18 [61], LeknesAACG17 [36], RajagopalanSX08 [51]
Concepts	sustainability			WangS23 [67], BoutilierC20 [10]
Concepts	tandem equipment allocation			HashemiJY22 [27]
Concepts	telemedicine	KeikhosrokianiMZS12 [31]		GaoZARL17 [20]

7.2 Concept Type Classification

Table 11: Works for Concepts of Type Classification

Type	Keyword	High	Medium	Low
Classification	CPG	HasanH21 [26], PillacVE14 [50]		
Classification	EPP	HasanH21 [26], PillacVE14 [50]		HasanH17 [25], Schmid12 [58]
Classification	Facility location	BharsakadeMNNP23 [9], HashemiJY22 [27], NadarJT22 [46], BoutilierC20 [10], LiuCZ19 [39], GaoZARL17 [20], ChenY16 [12], ZhiKM15 [70], RawlsT10 [52], ErkutIE08 [17], JiaOD07 [29]	WangS23 [67], WangWY22 [66], AbazariAR21 [1], BelangerRS19 [8], BelangerKRS16 [6], MccormackC15 [42], LiZH12 [38], ComberSSB11 [14], RajagopalanSX08 [51]	KazemipoorSSA21 [30], MemariTNJ20 [43], AnderssonGCSL20 [3], LeknesAACG17 [36], TalaricoMS15 [60], BrotcorneLS03 [11]
Classification	HASTE			PillacVE14 [50]
Classification	LSCM	BrotcorneLS03 [11]	HashemiJY22 [27], NadarJT22 [46]	ZhiKM15 [70]
Classification	MALP	NadarJT22 [46], RajagopalanSX08 [51], BrotcorneLS03 [11]	BelangerRS19 [8]	HashemiJY22 [27], KazemipoorSSA21 [30], BoutilierC20 [10], JiaOD07 [29]
Classification	MCLP	BelangerRS19 [8], ErkutIE08 [17], JiaOD07 [29], BrotcorneLS03 [11]	NadarJT22 [46], AnderssonGCSL20 [3], ZhiKM15 [70]	HashemiJY22 [27], WangWY22 [66], BoutilierC20 [10], MccormackC15 [42]
Classification	MEXCLP	NadarJT22 [46], BelangerRS19 [8], LeknesAACG17 [36], ErkutIE08 [17], BrotcorneLS03 [11]	HashemiJY22 [27], MccormackC15 [42], RajagopalanSX08 [51], JiaOD07 [29]	WangWY22 [66], AnderssonGCSL20 [3], BelangerKRS16 [6]
Classification	OOHCA	OngCNSLLOTCTY10 [49]		
Classification	Schedule	HasanH21 [26]	HasanH17 [25], PillacVE14 [50]	NadarJT22 [46], Hentenryck22 [65], BoutilierC20 [10], LiuCZ19 [39], RawlsT10 [52], MaxwellRHT10 [41], OngCNSLLOTCTY10 [49], RajagopalanSX08 [51]

7.3 Concept Type Constraints

Table 12: Works for Concepts of Type Constraints

Type	Keyword	High	Medium	Low
Constraints	AllDiff constraint			
Constraints	AllDiffPrec constraint			
Constraints	AlwaysConstant			
Constraints	Among constraint			
Constraints	AmongSeq constraint			
Constraints	Arithmetic constraint			
Constraints	AtMostSeq			
Constraints	AtMostSeqCard			
Constraints	Atmost constraint			
Constraints	Balance constraint			
Constraints	BinPacking constraint			
Constraints	Blocking constraint			
Constraints	BufferedResource			
Constraints	Calendar constraint			
Constraints	CardPath			
Constraints	Cardinality constraint			
Constraints	Channeling constraint			
Constraints	Completion constraint			
Constraints	CumulativeCost			
Constraints	Cumulatives constraint			
Constraints	Diff2 constraint			
Constraints	Disjunctive constraint			
Constraints	Element constraint			HasanH17 [25]
Constraints	Flowtime constraint			
Constraints	GCC constraint			
Constraints	GeneralizedAllDiffPrec			
Constraints	IloAlternative			
Constraints	IloAlwaysIn			
Constraints	IloForbidEnd			
Constraints	IloNoOverlap			
Constraints	IloPack			
Constraints	IloPulse			
Constraints	MinWeightAllDiff			
Constraints	MultiAtMostSeqCard			
Constraints	PreemptiveNoOverlap			
Constraints	Pulse constraint			
Constraints	Regular constraint			
Constraints	Reified constraint			
Constraints	RelSoftCumulative			
Constraints	RelSoftCumulativeSum			
Constraints	SoftCumulative			
Constraints	SoftCumulativeSum			
Constraints	TaskIntersection constraint			
Constraints	UTVPI constraint			
Constraints	WeightAllDiff			
Constraints	WeightedSum			
Constraints	WeightedTaskSum			
Constraints	alldifferent			
Constraints	alternative constraint			
Constraints	alwaysEqual constraint			
Constraints	alwaysIn			

Table 12: Works for Concepts of Type Constraints

Type	Keyword	High	Medium	Low
Constraints	bin-packing			
Constraints	circuit			RawlsT10 [52]
Constraints	cumulative	AnderssonGCSL20 [3], RawlsT10 [52]		BoutilierC20 [10], HasanH17 [25], LeknesAACG17 [36], MaxwellRHT10 [41], RajagopalanSX08 [51]
Constraints	cycle		BoutilierC20 [10], OngCNSLLOTCTY10 [49]	SchjolbergBPSM23 [57], HasanH17 [25], ZhiKM15 [70], ComberSSB11 [14], MaxwellRHT10 [41], ErkutIE08 [17]
Constraints	diffn			
Constraints	disjunctive			
Constraints	endBeforeStart			
Constraints	geost			
Constraints	noOverlap			
Constraints	regular expression			
Constraints	span constraint			
Constraints	table constraint			

7.4 Concept Type ProgLanguages

Table 13: Works for Concepts of Type ProgLanguages

Type	Keyword	High	Medium	Low
ProgLanguages	C			ZhenWHC14 [69]
ProgLanguages	C++			KazemipoorSSA21 [30], MccormackC15 [42], RawlsT10 [52]
ProgLanguages	Java			SchjolbergBPSM23 [57], PillacVE14 [50], RajagopalanSX08 [51]
ProgLanguages	Julia			
ProgLanguages	Lisp			
ProgLanguages	Prolog			
ProgLanguages	Python			KazemipoorSSA21 [30], BoutilierC20 [10], AnderssonGCSL20 [3], LeknesAACG17 [36]

7.5 Concept Type CPSystems

Table 14: Works for Concepts of Type CPSystems

Type	Keyword	High	Medium	Low
CPSystems	CHIP			
CPSystems	CPO			AbazariAR21 [1]
CPSystems	Choco Solver			
CPSystems	Chuffed			
CPSystems	Claire			
CPSystems	Cplex	NadarJT22 [46], AbazariAR21 [1], TalaricoMS15 [60], RawlsT10 [52]	RajagopalanSX08 [51]	KazemipoorSSA21 [30], BelangerRS19 [8], LiuCZ19 [39], ChenY16 [12], BelangerKRS16 [6], ZhiKM15 [70], ZhenWHC14 [69], ErkutIE08 [17], JiaOD07 [29], BrotcorneLS03 [11]
CPSystems	ECLiPSe			
CPSystems	Gecode			
CPSystems	Gurobi		PillacVE14 [50]	HasanH21 [26], BoutilierC20 [10], HasanH17 [25]
CPSystems	Ilog Scheduler			
CPSystems	Ilog Solver			
CPSystems	Lingo			WangS23 [67]
CPSystems	MiniZinc			
CPSystems	Mistral			
CPSystems	OPL	WangS23 [67], Hentenryck22 [65], WangWY22 [66], HashemiJY22 [27], AbazariAR21 [1], GaoZARL17 [20], TalaricoMS15 [60]	SchjolbergBPSM23 [57], KazemipoorSSA21 [30], AnderssonGCSL20 [3], LiuCZ19 [39], TavakkoliMT18 [61], LiZH12 [38], KeikhosrokianiMZS12 [31], ComberSSB11 [14], JiaOD07 [29]	BharsakadeMNNP23 [9], NadarJT22 [46], MemariTNJ20 [43], BoutilierC20 [10], BelangerRS19 [8], LeknesAACG17 [36], ChenY16 [12], PillacVE14 [50], ZhenWHC14 [69], OngCNSLLOTCTY10 [49], ErkutIE08 [17]
CPSystems	OR-Tools			
CPSystems	OZ			
CPSystems	SCIP			
CPSystems	SICStus			
CPSystems	Z3			

7.6 Concept Type ApplicationAreas

Table 15: Works for Concepts of Type ApplicationAreas

Type	Keyword	High	Medium	Low
ApplicationAreas	COVID		HashemiJY22 [27]	
ApplicationAreas	HVAC			
ApplicationAreas	agriculture			
ApplicationAreas	aircraft			
ApplicationAreas	ambulance allocation	SchjolbergBPSM23 [57], WangWY22 [66], NadarJT22 [46], MemariTNJ20 [43]	HashemiJY22 [27], AnderssonGCSL20 [3], ZhiKM15 [70]	BelangerRS19 [8], LeknesAACG17 [36], TalaricoMS15 [60], MccormackC15 [42]
ApplicationAreas	ambulance redeployment	MaxwellHT13 [40], MaxwellRHT10 [41]	BelangerRS19 [8], BelangerKRS16 [6], ZhiKM15 [70], Schmid12 [58]	KazemipoorSSA21 [30], BoutilierC20 [10], MccormackC15 [42], ZhenWHC14 [69], BrotcorneLS03 [11]
ApplicationAreas	astronomy			
ApplicationAreas	automotive			GaoZARL17 [20], TalaricoMS15 [60]
ApplicationAreas	blackout	Hentenryck22 [65]		
ApplicationAreas	bushfire			PillacVE14 [50]
ApplicationAreas	business process			
ApplicationAreas	cable tree			
ApplicationAreas	car manufacturing			
ApplicationAreas	cardiac arrest	LeknesAACG17 [36], MccormackC15 [42], OngCNSLLOTCTY10 [49], ErkutIE08 [17]	AnderssonGCSL20 [3]	SchjolbergBPSM23 [57], NadarJT22 [46], BoutilierC20 [10], BelangerRS19 [8], ChenY16 [12], ComberSSB11 [14]
ApplicationAreas	container terminal			
ApplicationAreas	crew-scheduling			NadarJT22 [46], LeknesAACG17 [36]
ApplicationAreas	cyclone			Hentenryck22 [65], RawlsT10 [52]
ApplicationAreas	dairies			
ApplicationAreas	dairy			
ApplicationAreas	datacenter			
ApplicationAreas	datacentre			
ApplicationAreas	day-ahead market			
ApplicationAreas	deep space			
ApplicationAreas	department of homeland security			Hentenryck22 [65], JiaOD07 [29]
ApplicationAreas	disaster management	Hentenryck22 [65], MemariTNJ20 [43]	AbazariAR21 [1], TavakkoliMT18 [61]	WangWY22 [66], ChenY16 [12], TalaricoMS15 [60], RawlsT10 [52]
ApplicationAreas	drone			SchjolbergBPSM23 [57], HashemiJY22 [27]
ApplicationAreas	earth observation			
ApplicationAreas	earth orbit			
ApplicationAreas	earthquake	WangS23 [67], WangWY22 [66], AbazariAR21 [1], MemariTNJ20 [43], LiuCZ19 [39], GaoZARL17 [20], ChenY16 [12], LiZH12 [38]	HashemiJY22 [27], TavakkoliMT18 [61], TalaricoMS15 [60], JiaOD07 [29]	BharsakadeMNNP23 [9], RawlsT10 [52]
ApplicationAreas	electroplating			
ApplicationAreas	emergency medical service	SchjolbergBPSM23 [57], NadarJT22 [46], HashemiJY22 [27], AnderssonGCSL20 [3], BoutilierC20 [10], BelangerRS19 [8], GaoZARL17 [20], BelangerKRS16 [6], MccormackC15 [42], LiZH12 [38], ComberSSB11 [14], ErkutIE08 [17], BrotcorneLS03 [11]	BharsakadeMNNP23 [9], WangWY22 [66], KazemipoorSSA21 [30], MemariTNJ20 [43], TavakkoliMT18 [61], LeknesAACG17 [36], ChenY16 [12], ZhiKM15 [70], ZhenWHC14 [69], MaxwellRHT10 [41], JiaOD07 [29]	LiuCZ19 [39], TalaricoMS15 [60], MaxwellHT13 [40], KeikhosrokianiMZS12 [31], OngCNSLLOTCTY10 [49], RajagopalanSX08 [51]
ApplicationAreas	emergency service	HashemiJY22 [27], BelangerRS19 [8], HasanH17 [25], ZhiKM15 [70], LiZH12 [38], ErkutIE08 [17], RajagopalanSX08 [51], JiaOD07 [29], BrotcorneLS03 [11]	NadarJT22 [46], HasanH21 [26], BoutilierC20 [10], MemariTNJ20 [43], BelangerKRS16 [6], MccormackC15 [42], Schmid12 [58], ComberSSB11 [14]	BharsakadeMNNP23 [9], WangWY22 [66], KazemipoorSSA21 [30], AnderssonGCSL20 [3], LeknesAACG17 [36], GaoZARL17 [20], PillacVE14 [50], KeikhosrokianiMZS12 [31]
ApplicationAreas	energy-price			
ApplicationAreas	evacuation	Hentenryck22 [65], HasanH21 [26], LiuCZ19 [39], HasanH17 [25], PillacVE14 [50]	WangWY22 [66], ChenY16 [12]	WangS23 [67], AbazariAR21 [1], ZhiKM15 [70], TalaricoMS15 [60], OngCNSLLOTCTY10 [49]

Table 15: Works for Concepts of Type ApplicationAreas

Type	Keyword	High	Medium	Low
ApplicationAreas	evacuation planning	HasanH21 [26], HasanH17 [25], PillacVE14 [50]	Hentenryck22 [65]	WangWY22 [66]
ApplicationAreas	farming			
ApplicationAreas	flood evacuation			Hentenryck22 [65]
ApplicationAreas	forestry			
ApplicationAreas	heart arrest			OngCNSLLOTCTY10 [49]
ApplicationAreas	high performance computing			
ApplicationAreas	high school timetabling			
ApplicationAreas	hoist			
ApplicationAreas	humanitarian aid		WangS23 [67]	Hentenryck22 [65], AbazariAR21 [1], MemariTNJ20 [43], LiuCZ19 [39]
ApplicationAreas	hurricane	Hentenryck22 [65], RawlsT10 [52]		WangS23 [67], AbazariAR21 [1], LiuCZ19 [39], TavakkoliMT18 [61], HasanH17 [25], TalaricoMS15 [60], PillacVE14 [50], JiaOD07 [29]
ApplicationAreas	maintenance scheduling			
ApplicationAreas	medical	SchjolbergBPSM23 [57], BharsakadeMNNP23 [9], HashemiJY22 [27], WangWY22 [66], NadarJT22 [46], KazemipoorSSA21 [30], MemariTNJ20 [43], AnderssonGCSL20 [3], BoutilierC20 [10], BelangerRS19 [8], LiuCZ19 [39], TavakkoliMT18 [61], LeknesAACG17 [36], GaoZARL17 [20], BelangerKRS16 [6], ChenY16 [12], MccormackC15 [42], ZhiKM15 [70], TalaricoMS15 [60], ZhenWHC14 [69], KeikhosrokianiMZS12 [31], LiZH12 [38], ComberSSB11 [14], RawlsT10 [52], OngCNSLLOTCTY10 [49], ErkutIE08 [17], JiaOD07 [29], BrotcorneLS03 [11]	MaxwellRHT10 [41], RajagopalanSX08 [51]	WangS23 [67], AbazariAR21 [1], MaxwellHT13 [40], Schmid12 [58]
ApplicationAreas	meeting scheduling			
ApplicationAreas	music festival			
ApplicationAreas	natural disaster	WangS23 [67], AbazariAR21 [1], LiuCZ19 [39]	Hentenryck22 [65], TavakkoliMT18 [61], ChenY16 [12], RawlsT10 [52]	HashemiJY22 [27], KazemipoorSSA21 [30], MemariTNJ20 [43], HasanH17 [25], GaoZARL17 [20], LiZH12 [38], JiaOD07 [29]
ApplicationAreas	network restoration			Hentenryck22 [65]
ApplicationAreas	nurse			SchjolbergBPSM23 [57], HashemiJY22 [27], MemariTNJ20 [43], GaoZARL17 [20]
ApplicationAreas	offshore			
ApplicationAreas	operating room			MemariTNJ20 [43]
ApplicationAreas	oven scheduling			
ApplicationAreas	patient	WangWY22 [66], NadarJT22 [46], HashemiJY22 [27], KazemipoorSSA21 [30], MemariTNJ20 [43], BoutilierC20 [10], AnderssonGCSL20 [3], BelangerRS19 [8], LiuCZ19 [39], TavakkoliMT18 [61], GaoZARL17 [20], BelangerKRS16 [6], ChenY16 [12], ZhiKM15 [70], TalaricoMS15 [60], MccormackC15 [42], ZhenWHC14 [69], MaxwellHT13 [40], KeikhosrokianiMZS12 [31], Schmid12 [58], ComberSSB11 [14], OngCNSLLOTCTY10 [49], MaxwellRHT10 [41], ErkutIE08 [17]	SchjolbergBPSM23 [57], BharsakadeMNNP23 [9], LeknesAACG17 [36]	RajagopalanSX08 [51], JiaOD07 [29], BrotcorneLS03 [11]
ApplicationAreas	perfect-square			
ApplicationAreas	physician		BelangerKRS16 [6], KeikhosrokianiMZS12 [31]	KazemipoorSSA21 [30], AnderssonGCSL20 [3], BelangerRS19 [8], OngCNSLLOTCTY10 [49]
ApplicationAreas	pipeline			ChenY16 [12], OngCNSLLOTCTY10 [49]
ApplicationAreas	power network			Hentenryck22 [65]

Table 15: Works for Concepts of Type ApplicationAreas

Type	Keyword	High	Medium	Low
ApplicationAreas	power network restoration			Hentenryck22 [65]
ApplicationAreas	radiation therapy			
ApplicationAreas	railway			NadarJT22 [46], ChenY16 [12]
ApplicationAreas	real-time pricing			
ApplicationAreas	rectangle-packing			
ApplicationAreas	relief distribution		Hentenryck22 [65]	WangS23 [67], KazemipoorSSA21 [30]
ApplicationAreas	response time	SchjolbergBPSM23 [57], WangWY22 [66], NadarJT22 [46], HashemiJY22 [27], AnderssonGCSL20 [3], BoutilierC20 [10], BelangerRS19 [8], LeknesAACG17 [36], MccormackC15 [42], ZhiKM15 [70], TalaricoMS15 [60], ZhenWHC14 [69], MaxwellHT13 [40], Schmid12 [58], ComberSSB11 [14], MaxwellRHT10 [41], OngCNSLLOTCTY10 [49], ErkutIE08 [17]	TavakkoliMT18 [61], BelangerKRS16 [6], ChenY16 [12], JiaOD07 [29], BrotcorneLS03 [11]	BharsakadeMNNP23 [9], Hentenryck22 [65], AbazariAR21 [1], KazemipoorSSA21 [30], MemariTNJ20 [43], LiuCZ19 [39], RajagopalanSX08 [51]
ApplicationAreas	robot			BoutilierC20 [10], MaxwellRHT10 [41]
ApplicationAreas	satellite	OngCNSLLOTCTY10 [49]		
ApplicationAreas	semiconductor			
ApplicationAreas	ship building			
ApplicationAreas	shipping line			
ApplicationAreas	steel cable			
ApplicationAreas	steel mill			
ApplicationAreas	super-computer			
ApplicationAreas	surgery			BoutilierC20 [10], GaoZARL17 [20]
ApplicationAreas	telescope			
ApplicationAreas	tornado			RawlsT10 [52]
ApplicationAreas	torpedo			
ApplicationAreas	train schedule			
ApplicationAreas	tsunami		WangS23 [67], Hentenryck22 [65]	TavakkoliMT18 [61], TalaricoMS15 [60], LiZH12 [38]
ApplicationAreas	typhoon			WangS23 [67], LiZH12 [38]
ApplicationAreas	vaccine		JiaOD07 [29]	
ApplicationAreas	wildfire			HasanH17 [25], TalaricoMS15 [60]
ApplicationAreas	workforce scheduling			
ApplicationAreas	yard crane			

7.7 Concept Type Industries

Table 16: Works for Concepts of Type Industries

Type	Keyword	High	Medium	Low
Industries	IT industry			
Industries	PCB industry			
Industries	aerospace industry			
Industries	agricultural industry			
Industries	agrifood industry			
Industries	airline industry			
Industries	automobile industry			
Industries	automotive industry			
Industries	aviation industry			
Industries	cable industry			
Industries	carpet industry			
Industries	chemical industry			
Industries	chemical processing industry			
Industries	chemistry industry			
Industries	chips industry			
Industries	circuit boards industry			
Industries	control system industry			
Industries	cutting industry			
Industries	dairy industry			
Industries	dismantling industry			
Industries	drawing industry			
Industries	electricity industry			
Industries	electricity industry			
Industries	electronics industry			
Industries	electroplating industry			
Industries	energy industry			
Industries	fashion industry			
Industries	food industry			
Industries	food-processing industry			
Industries	forest industry			
Industries	forging industry			
Industries	foundry industry			
Industries	garment industry			
Industries	gas industry			
Industries	glass industry			
Industries	heavy industry			
Industries	insulation industry			
Industries	leisure industry			
Industries	lumber industry			
Industries	manufacturing industry			
Industries	maritime industry			
Industries	metal industry			
Industries	metalworking industry			
Industries	mineral industry			
Industries	mining industry			
Industries	nuclear industry			
Industries	oil industry			
Industries	packaging industry			
Industries	painting industry			
Industries	paper industry			
Industries	petro-chemical industry			

Table 16: Works for Concepts of Type Industries

Type	Keyword	High	Medium	Low
Industries	pharmaceutical industry			KazemipoorSSA21 [30]
Industries	potash industry			
Industries	power industry			
Industries	printing industry			
Industries	process industry			
Industries	processing industry			
Industries	railway industry			
Industries	repair industry			
Industries	retail industry			
Industries	semiconductor industry			
Industries	semiprocess industry			
Industries	service industry			
Industries	ship repair industry			
Industries	shipping industry			
Industries	software industry			
Industries	solar cell industry			
Industries	steel industry			
Industries	steel making industry			
Industries	sugar industry			
Industries	taxi industry			
Industries	telecommunication industry			
Industries	textile industry			
Industries	tire industry			
Industries	tourism industry			
Industries	trade industry			
Industries	transportation industry			
Industries	wind industry			

7.8 Concept Type Benchmarks

Table 17: Works for Concepts of Type Benchmarks

Type	Keyword	High	Medium	Low
Benchmarks	CSPlib			
Benchmarks	Roadef			NadarJT22 [46]
Benchmarks	benchmark	MaxwellRHT10 [41]		SchjolbergBPSM23 [57], Hentenryck22 [65], BelangerRS19 [8], ChenY16 [12], TalaricoMS15 [60], MaxwellHT13 [40], Schmid12 [58], RajagopalanSX08 [51], ErkutIE08 [17]
Benchmarks	bitbucket			
Benchmarks	generated instance			NadarJT22 [46], PillacVE14 [50], ZhenWHC14 [69]
Benchmarks	github			
Benchmarks	gitlab			
Benchmarks	industrial instance			
Benchmarks	industrial partner			
Benchmarks	industry partner			
Benchmarks	instance generator			
Benchmarks	random instance			BelangerRS19 [8], BelangerKRS16 [6]
Benchmarks	real-life		BelangerRS19 [8], BelangerKRS16 [6], MccormackC15 [42], RajagopalanSX08 [51]	SchjolbergBPSM23 [57], BharsakadeMNNP23 [9], NadarJT22 [46], HashemiJY22 [27], HasanH21 [26], AbazariAR21 [1], LiuCZ19 [39], HasanH17 [25], BrotcorneLS03 [11]
Benchmarks	real-world	KazemipoorSSA21 [30]	HashemiJY22 [27], AbazariAR21 [1], HasanH21 [26], Schmid12 [58]	SchjolbergBPSM23 [57], BoutilierC20 [10], AnderssonGCSL20 [3], GaoZARL17 [20], HasanH17 [25], ZhiKM15 [70], ComberSSB11 [14], JiaOD07 [29]
Benchmarks	supplementary material			LiuCZ19 [39]
Benchmarks	zenodo			

7.9 Concept Type Algorithms

Table 18: Works for Concepts of Type Algorithms

Type	Keyword	High	Medium	Low
Algorithms	GRASP			MemariTNJ20 [43]
Algorithms	IGT			
Algorithms	Lagrangian relaxation	ChenY16 [12], RawlsT10 [52]		AbazariAR21 [1]
Algorithms	MINLP		NadarJT22 [46], AbazariAR21 [1]	MemariTNJ20 [43]
Algorithms	MIQP			
Algorithms	NEH			
Algorithms	ant colony			WangS23 [67], HashemiJY22 [27], NadarJT22 [46], BelangerRS19 [8], ChenY16 [12], PillacVE14 [50], ComberSSB11 [14]
Algorithms	bi-partite matching			
Algorithms	column generation	HasanH21 [26], HasanH17 [25], PillacVE14 [50]		Hentenryck22 [65], LiuCZ19 [39]
Algorithms	conflict-driven clause learning			
Algorithms	deep learning			
Algorithms	discrete event simulation		LeknesAACG17 [36]	SchjolbergBPSM23 [57], AnderssonGCSL20 [3], BelangerRS19 [8], ZhenWHC14 [69], MaxwellHT13 [40]
Algorithms	disjstra algorithm			
Algorithms	dynamic programming	BelangerRS19 [8], ZhenWHC14 [69], MaxwellHT13 [40], Schmid12 [58], MaxwellRHT10 [41]	BelangerKRS16 [6], ZhiKM15 [70]	BoutilierC20 [10], MccormackC15 [42], TalaricoMS15 [60]
Algorithms	edge-finder			
Algorithms	edge-finding			
Algorithms	energetic reasoning			
Algorithms	evolutionary computing			SchjolbergBPSM23 [57]
Algorithms	genetic algorithm	SchjolbergBPSM23 [57], HashemiJY22 [27], MemariTNJ20 [43], GaoZARL17 [20], MccormackC15 [42], ComberSSB11 [14]	WangWY22 [66], NadarJT22 [46], ZhenWHC14 [69], LiZH12 [38], RajagopalanSX08 [51]	KazemipoorSSA21 [30], BelangerRS19 [8], TavakkoliMT18 [61], LeknesAACG17 [36], TalaricoMS15 [60], KeikhosrokianiMZS12 [31]
Algorithms	greedy method			
Algorithms	k-means	BharsakadeMNNP23 [9]	GaoZARL17 [20]	SchjolbergBPSM23 [57]
Algorithms	k-medoid	ChenY16 [12]		GaoZARL17 [20]
Algorithms	large language model			
Algorithms	large neighborhood search		TalaricoMS15 [60]	Hentenryck22 [65], LiuCZ19 [39], PillacVE14 [50]
Algorithms	lazy clause generation			
Algorithms	machine learning	SchjolbergBPSM23 [57], BoutilierC20 [10]		Hentenryck22 [65], MccormackC15 [42], MaxwellHT13 [40], ComberSSB11 [14]
Algorithms	mat heuristic	PillacVE14 [50]		
Algorithms	max-flow			Hentenryck22 [65]
Algorithms	memetic algorithm	SchjolbergBPSM23 [57], NadarJT22 [46]		
Algorithms	meta heuristic	SchjolbergBPSM23 [57], HashemiJY22 [27], NadarJT22 [46], AbazariAR21 [1], MemariTNJ20 [43], BelangerRS19 [8], TalaricoMS15 [60], RajagopalanSX08 [51]	MccormackC15 [42]	WangWY22 [66], KazemipoorSSA21 [30], BoutilierC20 [10], LiuCZ19 [39], TavakkoliMT18 [61], ChenY16 [12], ZhenWHC14 [69], Schmid12 [58], BrotcorneLS03 [11]
Algorithms	neural network			MaxwellHT13 [40], MaxwellRHT10 [41]
Algorithms	not-first			
Algorithms	not-last			
Algorithms	particle swarm		WangWY22 [66]	WangS23 [67], HashemiJY22 [27], AbazariAR21 [1]
Algorithms	quadratic programming			
Algorithms	reinforcement learning			SchjolbergBPSM23 [57], MaxwellHT13 [40], Schmid12 [58], MaxwellRHT10 [41]
Algorithms	simulated annealing	WangWY22 [66]		NadarJT22 [46], BelangerRS19 [8], LiZH12 [38], ComberSSB11 [14], RajagopalanSX08 [51]

Table 18: Works for Concepts of Type Algorithms

Type	Keyword	High	Medium	Low
Algorithms	support vector regression			
Algorithms	swarm intelligence			AbazariAR21 [1]
Algorithms	sweep			
Algorithms	systematic local search			
Algorithms	tabu search	NadarJT22 [46], BelangerRS19 [8], RajagopalanSX08 [51]	ZhiKM15 [70], BrotcorneLS03 [11]	BharsakadeMNNP23 [9], HashemiJY22 [27], WangWY22 [66], GaoZARL17 [20], BelangerKRS16 [6], TalaricoMS15 [60], MccormackC15 [42], ZhenWHC14 [69], MaxwellHT13 [40], Schmid12 [58], MaxwellRHT10 [41]
Algorithms	time-tabling			
Algorithms	variable neighborhood search			AbazariAR21 [1], KazemipoorSSA21 [30], MemariTNJ20 [43], BelangerRS19 [8], ZhiKM15 [70]

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A Papers and Articles Missing a Local Copy

This section lists all papers and articles for which we were not able to locate an electronic copy that we could download to our system. This might be because the work is behind a paywall for which we do not have access, or since the paper only exists in hardcopy, for works from the start of the period covered. As in either case we are not able to extract useful information from the work, either automatically, or manually, without the actual text itself, these gaps should be closed where possible.

Table 19: PAPER without Local Copy

Key	URL	Authors	Title	Year	Conference /Journal	Cite

Table 20: ARTICLE without Local Copy

Key	URL	Authors	Title	Year	Conference /Journal	Cite
KhoshgehbariM23	KhoshgehbariM23	F. Khoshgehbari, S. Mohammad J. Mirzapour Al-e-Hashem	Ambulance location routing problem considering all sources of uncertainty: Progressive estimating algorithm	2023	Computers Operations Research	[32]
NadarJT23	NadarJT23	Raviarun A. Nadar, J. Jha, Jitesh J. Thakkar	Adaptive variable neighbourhood search approach for time-dependent joint location and dispatching problem in a multi-tier ambulance system	2023	Computers Operations Research	[47]
FrichiJAB22	FrichiJAB22	Y. Frichi, F. Jawab, L. Aboueljinane, S. Boutahari	Development and comparison of two new multi-period queueing reliability models using discrete-event simulation and a simulation–optimization approach	2022	Computers Industrial Engineering	[19]
HatamiMarbiniVS	HatamiMarbiniVS	A. Hatami-Marbini, N. Varzgani, Seyed Mojtaba Sajadi, A. Kamali	An emergency medical services system design using mathematical modeling and simulation-based optimization approaches	2022	Decision Analytics Journal	[28]
LeeCC22	LeeCC22	Y. Lee, Y. Chen, Albert Y. Chen	Lagrangian dual decomposition for the ambulance relocation and routing considering stochastic demand with the truncated Poisson	2022	Transportation Research Part B: Methodological	[35]
MukhopadhyayPV	MukhopadhyayPV	A. Mukhopadhyay, G. Pettet, Sayyed Mohsen Vazirizade, D. Lu, A. Jaimes, Said El Said, H. Baroud, Y. Vorobeychik, M. Kochenderfer, A. Dubey	A Review of Incident Prediction, Resource Allocation, and Dispatch Models for Emergency Management	2022	Accident Analysis Prevention	[44]
NeiraRodadoEWN	NeiraRodadoEWN	D. Neira-Rodado, John Wilmer Escobar-Velasquez, S. McClean	Ambulances Deployment Problems: Categorization, Evolution and Dynamic Problems Review	2022	ISPRS International Journal of Geo-Information	[48]
NadarJT21	NadarJT21	Raviarun A. Nadar, J. Jha, Jitesh J. Thakkar	Strategic location of ambulances under temporal variation in demand and travel time using variable neighbourhood search based approach	2021	Computers Industrial Engineering	[45]
WangWWZQ21	WangWWZQ21	W. Wang, S. Wu, S. Wang, L. Zhen, X. Qu	Emergency facility location problems in logistics: Status and perspectives	2021	Transportation Research Part E: Logistics and Transportation Review	[68]
BelangerLNRS20	BelangerLNRS20	V. Bélanger, E. Lanzarone, V. Nicoletta, A. Ruiz, P. Soriano	A recursive simulation-optimization framework for the ambulance location and dispatching problem	2020	European Journal of Operational Research	[7]
AhmadiJavidSS17	AhmadiJavidSS17	A. Ahmadi-Javid, P. Seyedi, Siddhartha S. Syam	A survey of healthcare facility location	2017	Computers Operations Research	[2]
AringhieriBKE17	AringhieriBKE17	R. Aringhieri, M. Bruni, S. Khodaparasti, J.T. van Essen	Emergency medical services and beyond: Addressing new challenges through a wide literature review	2017	Computers Operations Research	[5]
ReuterBV17	ReuterBV17	M. Reuter-Oppermann, Pieter L. van den Berg, Julie L. Vile	Logistics for Emergency Medical Service systems	2017	Health Systems	[54]
Barneveld16	Barneveld16	Thije van Barneveld	The Minimum Expected Penalty Relocation Problem for the Computation of Compliance Tables for Ambulance Vehicles	2016	INFORMS Journal on Computing	[64]
FarahaniAHHG12	FarahaniAHHG12	Reza Zanjirani Farahani, N. Asgari, N. Heidari, M. Hosseininia, M. Goh	Covering problems in facility location: A review	2012	Computers Industrial Engineering	[18]
LiZZW11	LiZZW11	X. Li, Z. Zhao, X. Zhu, T. Wyatt	Covering models and optimization techniques for emergency response facility location and planning: a review	2011	Mathematical Methods of Operations Research	[37]
AnderssonV07	AnderssonV07	T. Andersson, P. Värbrand	Decision support tools for ambulance dispatch and relocation	2007	Journal of the Operational Research Society	[4]

Table 20: ARTICLE without Local Copy

Key	URL	Authors	Title	Year	Conference /Journal	Cite
GendreauLS06	GendreauLS06	M. Gendreau, G. Laporte, F. Semet	The maximal expected coverage relocation problem for emergency vehicles	2006	Journal of the Operational Research Society	[23]
GendreauLS01	GendreauLS01	M. Gendreau, G. Laporte, F. Semet	A dynamic model and parallel tabu search heuristic for real-time ambulance relocation	2001	Parallel Computing	[22]
GendreauLS97	GendreauLS97	M. Gendreau, G. Laporte, F. Semet	Solving an ambulance location model by tabu search	1997	Location Science	[21]
RepedeB94	RepedeB94	John F. Repede, John J. Bernardo	Developing and validating a decision support system for locating emergency medical vehicles in Louisville, Kentucky	1994	European Journal of Operational Research	[53]
ReVelle89	ReVelle89	C. ReVelle	Review, extension and prediction in emergency service siting models	1989	European Journal of Operational Research	[55]
ReVelleH89	ReVelleH89	C. ReVelle, K. Hogan	The Maximum Availability Location Problem	1989	Transportation Science	[56]
Daskin83	Daskin83	Mark S. Daskin	A Maximum Expected Covering Location Model: Formulation, Properties and Heuristic Solution	1983	Transportation Science	[15]
DaskinS81	DaskinS81	Mark S. Daskin, Edmund H. Stern	A Hierarchical Objective Set Covering Model for Emergency Medical Service Vehicle Deployment	1981	Transportation Science	[16]
Larson75	Larson75	Richard C. Larson	Approximating the Performance of Urban Emergency Service Systems	1975	Operations Research	[34]
ChurchR74	ChurchR74	R. Church, C. ReVelle	The maximal covering location problem	1974	Papers of the Regional Science Association	[13]
Larson74	Larson74	Richard C. Larson	A hypercube queuing model for facility location and redistricting in urban emergency services	1974	Computers Operations Research	[33]
ToregasSRB71	ToregasSRB71	C. Toregas, R. Swain, C. ReVelle, L. Bergman	The Location of Emergency Service Facilities	1971	Operations Research	[63]

B Papers and Articles Without Recognized Concepts

This section lists papers and articles for which we have a pdf local copy, but where we were not able to extract any of the defined concepts. This can basically have two reasons. We either have included a paper which is not at all related to scheduling, so that none of the defined concepts occur in the paper. A more likely cause is that the pdf file is a scanned document for which optical character recognition was not run or not successful, so that the pdf consists of a series of bitmap images. In that case, pdfgrep is unable to find any text in the document, and no matches for concepts are found. It may be useful to check the pdf files to see if that is the case.

Table 21: PAPER without Concepts

Key	Local Copy	Authors	Title	Year	Conference /Journal	Cite	Pages

Table 22: ARTICLE without Concepts

Key	Local Copy	Authors	Title	Year	Conference /Journal	Cite	Pages

C Unmatched Concepts

This section lists those concepts for which no matches were found. The most likely cause is a mistake in the regular expression used to find the concept, but it is also possible that some concept simply is not mentioned in any of the documents.

Table 23: Unmatched Concepts

Type	Name	CaseSensitive	Revision
Algorithms	IGT	Y	0
Algorithms	MIQP		0
Algorithms	NEH	Y	0
Algorithms	bi-partite matching		0
Algorithms	conflict-driven clause learning		0
Algorithms	deep learning		0
Algorithms	disjstra algorithm		0
Algorithms	edge-finder		0
Algorithms	edge-finding		0
Algorithms	energetic reasoning		0
Algorithms	greedy method		0
Algorithms	large language model		0
Algorithms	lazy clause generation		1
Algorithms	not-first		0
Algorithms	not-last		0
Algorithms	quadratic programming		0
Algorithms	support vector regression		0
Algorithms	sweep		0
Algorithms	systematic local search		0
Algorithms	time-tabling		0
Benchmarks	CSPlib		0
Benchmarks	bitbucket		0
Benchmarks	github		0
Benchmarks	gitlab		0
Benchmarks	industrial instance		0
Benchmarks	industrial partner		0
Benchmarks	industry partner		0
Benchmarks	instance generator		0
Benchmarks	zenodo		0
CPSystems	CHIP	Y	1
CPSystems	Choco Solver		0
CPSystems	Chuffed		0
CPSystems	Claire		0
CPSystems	ECLiPSe		0
CPSystems	Gecode		0
CPSystems	Ilog Scheduler		0
CPSystems	Ilog Solver		0
CPSystems	MiniZinc		0
CPSystems	Mistral		0
CPSystems	OR-Tools		0
CPSystems	OZ	Y	1
CPSystems	SCIP	Y	0
CPSystems	SICStus		0
CPSystems	Z3		0
ProgLanguages	Julia		0
ProgLanguages	Lisp		0
ProgLanguages	Prolog		0
Industries	IT industry	Y	0
Industries	PCB industry		0

Table 23: Unmatched Concepts

Type	Name	CaseSensitive	Revision
Industries	aerospace industry		0
Industries	agricultural industry		0
Industries	agrifood industry		0
Industries	airline industry		0
Industries	automobile industry		0
Industries	automotive industry		0
Industries	aviation industry		0
Industries	cable industry		0
Industries	carpet industry		0
Industries	chemical industry		0
Industries	chemical processing industry		0
Industries	chemistry industry		0
Industries	chips industry		0
Industries	circuit boards industry		0
Industries	control system industry		0
Industries	cutting industry		0
Industries	dairy industry		0
Industries	dismantling industry		0
Industries	drawing industry		0
Industries	electricity industry		0
Industries	electricity industry		0
Industries	electronics industry		0
Industries	electroplating industry		0
Industries	energy industry		0
Industries	fashion industry		0
Industries	food industry		0
Industries	food-processing industry		0
Industries	forest industry		0
Industries	forging industry		0
Industries	foundry industry		0
Industries	garment industry		0
Industries	gas industry		0
Industries	glass industry		0
Industries	heavy industry		0
Industries	insulation industry		0
Industries	leisure industry		0
Industries	lumber industry		0
Industries	manufacturing industry		0
Industries	maritime industry		0
Industries	metal industry		0
Industries	metalworking industry		0
Industries	mineral industry		0
Industries	mining industry		0
Industries	nuclear industry		0
Industries	oil industry		0
Industries	packaging industry		0
Industries	painting industry		0
Industries	paper industry		0
Industries	petro-chemical industry		0
Industries	potash industry		0
Industries	power industry		0
Industries	printing industry		0
Industries	process industry		0
Industries	processing industry		0
Industries	railway industry		0
Industries	repair industry		0

Table 23: Unmatched Concepts

Type	Name	CaseSensitive	Revision
Industries	retail industry		0
Industries	semiconductor industry		0
Industries	semiprocess industry		0
Industries	service industry		0
Industries	ship repair industry		0
Industries	shipping industry		0
Industries	software industry		0
Industries	solar cell industry		0
Industries	steel industry		0
Industries	steel making industry		0
Industries	sugar industry		0
Industries	taxi industry		0
Industries	telecommunication industry		0
Industries	textile industry		0
Industries	tire industry		0
Industries	tourism industry		0
Industries	trade industry		0
Industries	transportation industry		0
Industries	wind industry		0
ApplicationAreas	HVAC		0
ApplicationAreas	agriculture		0
ApplicationAreas	aircraft		0
ApplicationAreas	astronomy		0
ApplicationAreas	business process		0
ApplicationAreas	cable tree		0
ApplicationAreas	car manufacturing		0
ApplicationAreas	container terminal		0
ApplicationAreas	dairies		0
ApplicationAreas	dairy		0
ApplicationAreas	datacenter		0
ApplicationAreas	datacentre		0
ApplicationAreas	day-ahead market		0
ApplicationAreas	deep space		0
ApplicationAreas	earth observation		0
ApplicationAreas	earth orbit		0
ApplicationAreas	electroplating		0
ApplicationAreas	energy-price		0
ApplicationAreas	farming		0
ApplicationAreas	forestry		0
ApplicationAreas	high performance computing		0
ApplicationAreas	high school timetabling		0
ApplicationAreas	hoist		0
ApplicationAreas	maintenance scheduling		0
ApplicationAreas	meeting scheduling		0
ApplicationAreas	music festival		0
ApplicationAreas	offshore		0
ApplicationAreas	oven scheduling		0
ApplicationAreas	perfect-square		0
ApplicationAreas	radiation therapy		0
ApplicationAreas	real-time pricing		0
ApplicationAreas	rectangle-packing		0
ApplicationAreas	semiconductor		0
ApplicationAreas	ship building		0
ApplicationAreas	shipping line		0
ApplicationAreas	steel cable		0
ApplicationAreas	steel mill		0

Table 23: Unmatched Concepts

Type	Name	CaseSensitive	Revision
ApplicationAreas	super-computer		0
ApplicationAreas	telescope		0
ApplicationAreas	torpedo		0
ApplicationAreas	train schedule		0
ApplicationAreas	workforce scheduling		1
ApplicationAreas	yard crane		0
Constraints	AllDiff constraint		0
Constraints	AllDiffPrec constraint		0
Constraints	AlwaysConstant		0
Constraints	Among constraint		0
Constraints	AmongSeq constraint		0
Constraints	Arithmetic constraint		0
Constraints	AtMostSeq		0
Constraints	AtMostSeqCard		0
Constraints	Atmost constraint		0
Constraints	Balance constraint		0
Constraints	BinPacking constraint		0
Constraints	Blocking constraint		0
Constraints	BufferedResource		0
Constraints	Calendar constraint		0
Constraints	CardPath		0
Constraints	Cardinality constraint		0
Constraints	Channeling constraint		0
Constraints	Completion constraint		0
Constraints	CumulativeCost		0
Constraints	Cumulatives constraint		0
Constraints	Diff2 constraint		0
Constraints	Disjunctive constraint		0
Constraints	Flowtime constraint		0
Constraints	GCC constraint		0
Constraints	GeneralizedAllDiffPrec		0
Constraints	IloAlternative		0
Constraints	IloAlwaysIn		0
Constraints	IloForbidEnd		0
Constraints	IloNoOverlap		0
Constraints	IloPack		0
Constraints	IloPulse		0
Constraints	MinWeightAllDiff		0
Constraints	MultiAtMostSeqCard		0
Constraints	PreemptiveNoOverlap		0
Constraints	Pulse constraint		0
Constraints	Regular constraint		0
Constraints	Reified constraint		0
Constraints	RelSoftCumulative		0
Constraints	RelSoftCumulativeSum		0
Constraints	SoftCumulative		0
Constraints	SoftCumulativeSum		0
Constraints	TaskIntersection constraint		0
Constraints	UTVPI constraint		0
Constraints	WeightAllDiff		0
Constraints	WeightedSum		0
Constraints	WeightedTaskSum		0
Constraints	alldifferent		0
Constraints	alternative constraint		0
Constraints	alwaysEqual constraint		0
Constraints	alwaysIn		0

Table 23: Unmatched Concepts

Type	Name	CaseSensitive	Revision
Constraints	bin-packing		0
Constraints	diffn		0
Constraints	disjunctive		0
Constraints	endBeforeStart		0
Constraints	geost		0
Constraints	noOverlap		0
Constraints	regular expression		0
Constraints	span constraint		0
Constraints	table constraint		0
Concepts	geo-spatial time analysis		0

D Works by Author

E Other Works

E.1 Books from bibtex

Table 24: Works from bibtex (Total 1)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
Nguyen15 Nguyen15	Ngoc-Hien Thi Nguyen	Quantitative Analysis of Ambulance Location-allocation and Ambulance State Prediction	No	[62]	2015	Book	null	1	0	No	n/a

E.2 PhDThesis from bibtex

Table 25: Works from bibtex (Total 0)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c

Table 26: Automatically Extracted THESIS Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c

E.3 InBook from bibtex

Table 27: Works from bibtex (Total 2)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
StratmanBA23 StratmanBA23	Eric G. Stratman, Justin J. Boutilier, Laura A. Albert	Uncertainty in Facility Location Models for Emergency Medical Services	No	[59]	2023	Uncertainty in Facility Location Problems	null	0	150	No	n/a
GunesMN19 GunesMN19	Evrim Didem Güneş, T. Melo, S. Nickel	Location Problems in Healthcare	No	[24]	2019	Location Science	null	8	114	No	n/a

E.4 InCollection from bibtex

Table 28: Works from bibtex (Total 2)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c
BharsakadeMNNP23 BharsakadeMNNP23	R. Bharsakade, S. More, S. Nandeshwar, R. Narnaware, R. Patil	Emergency Facility Location of Ambulances Using K-Means Clustering and Minimax	Yes	[9]	2023	Recent Advances in Mechanical Engineering	10	0	14	353	n/a
PillacVE14 PillacVE14	V. Pillac, Pascal Van Hentenryck, C. Even	A Path-Generation Matheuristic for Large Scale Evacuation Planning	Yes	[50]	2014	Hybrid Metaheuristics	14	6	20	354	n/a

Table 29: Automatically Extracted INCOLLECTION Properties (Requires Local Copy)

Work	Pages	Concepts	Classification	Constraints	Prog Languages	CP Systems	Areas	Industries	Benchmarks	Algorithm	a	c
BharsakadeMNNP23 [9]	10		Facility location			OPL	emergency medical service, response time, medical, emergency service, patient, earthquake		real-life	tabu search, k-means	351	n/a
PillacVE14 [50]	14	scheduling	Schedule, EPP, CPG, HASTE		Java	OPL, Gurobi	hurricane, bushfire, emergency service, evacuation, evacuation planning		generated instance	column generation, ant colony, mat heuristic, large neighborhood search	352	n/a

F Background Works

Table 30: Works from bibtex (Total 0)

Key Source	Authors	Title	LC	Cite	Year	Conference /Journal /School	Pages	Nr Cites	Nr Refs	b	c