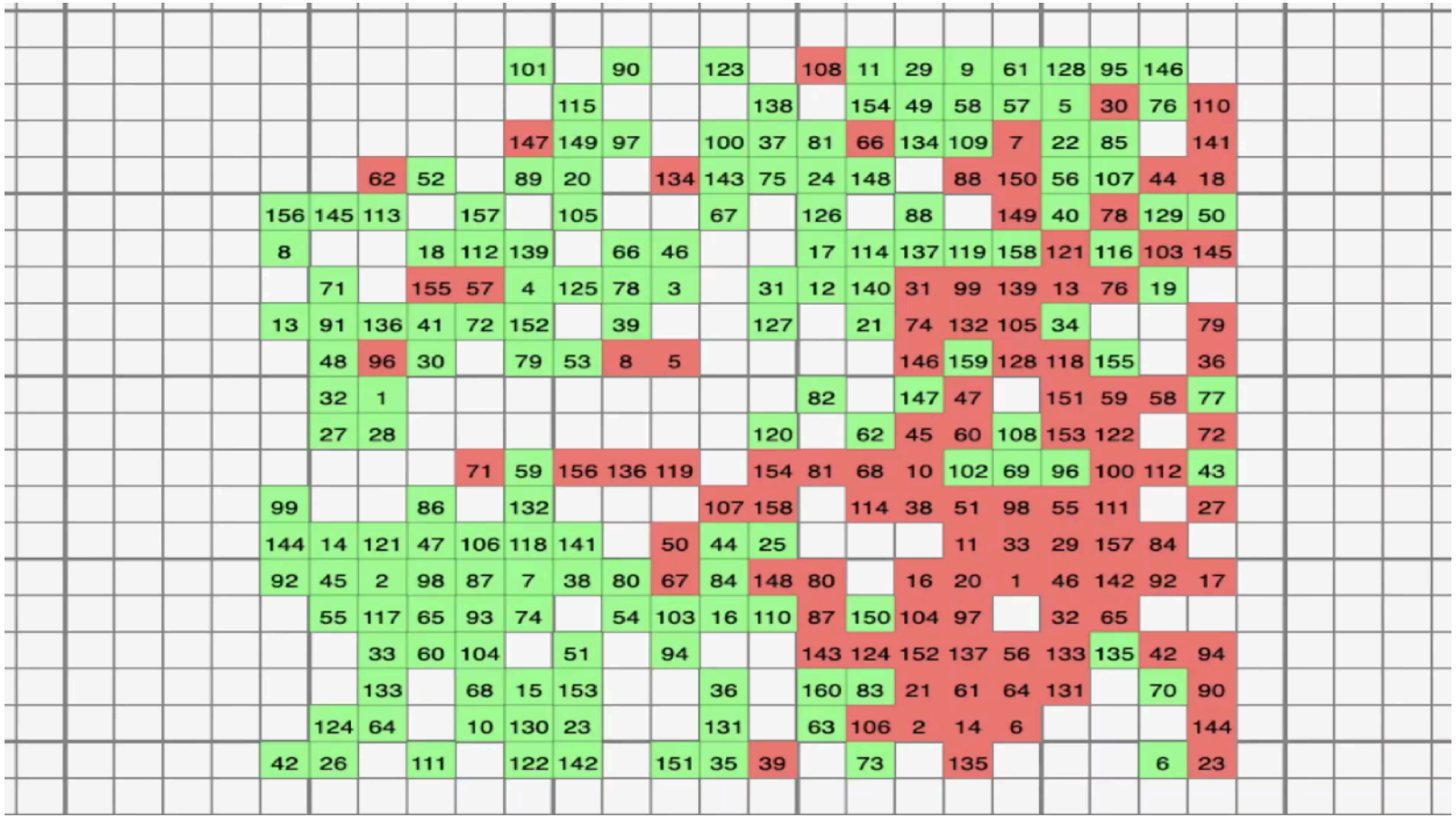
CG:SHOP

Computational Geometry: Solving Hard Optimization Problems (CG:SHOP)

Optimization Challenge 2020

Sándor P. Fekete, Joseph S.B. Mitchell
Dominik Krupke, Phillip Keldenich

Contest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8 18 112 139 66 46 17 114 137 119 158 121 116 103 145
71 155 57 4 125 78 3 31 12 140 31 99 139 13 76 19
13 91 136 41 72 152 39 127 21 74 132 105 34 79
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92 45 2 98 87 7 38 80 67 84 148 80 16 20 1 46 142 92 17
55 117 65 93 74 54 103 16 110 87 150 104 97 32 65
33 60 104 51 94 143 124 152 137 56 133 135 42 94
133 68 15 153 36 160 83 21 61 64 131 70 90
124 64 10 130 23 131 63 106 2 14 6 144
42 26 111 122 142 151 35 39 73 135 6 23

Contest

Timeline

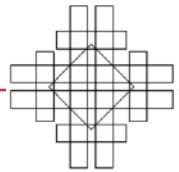
November 20, 2020 (0:00 a.m., UTC)
Release of instances, detailed rules, start of contest

February 15, 2021 (11:59 p.m., AoE)
Contest closes, winners are invited to submit an abstract for the SoCG proceedings by early March

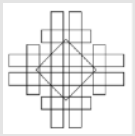
March 1, 2021
First version of proceedings abstracts due for screening and editing

March 15, 2021
Feedback on abstracts, notification of acceptance, details of final revision

March 31, 2021



Results



MAX

Rank	Team	Junior team	Score MAX	Score SUM	# Best solutions (MAX)	# Best solutions (SUM)
1	Shadoks		202.9375	180.4952611231	202	0
2	UNIST		174.0180514765	191.7893810645	14	120
3	gitastrophe	✔	159.5472362028	198.494347968	24	57
4	S10ppy J035	✔	109.2778121365	133.4501332187	3	1
5	École Polytechnique	✔	90.821381055	75.4734925687	3	0
6	TUeSWarM	✔	83.0897618024	146.2244661202	7	1
7	Jo-Jo	✔	75.2449269488	71.2250093356	6	0
8	BlueTeamTechnion	✔	65.0906326661	165.5633491694	7	34
9	Lasteam	✔	41.6065110105	51.6922267817	1	0
10	Kleinkariert	✔	36.0898925507	81.7086488616	0	0
11	Team ITI	✔	28.8908101134	109.4631823463	3	0
12	cgl@tau		17.9713562099	175.0754043416	1	6
13	socg-pixel-routing		16.5042315651	10.5005248555	0	0
14	Tufts University CompGeo		16.0921458988	11.4071652148	3	0
15	fast mode	✔	6.0460206482	9.3604866139	0	0
16	JMU Wuerzburg		4.6921615113	5.4183848554	0	0
17	MarsIsFlat	✔	0.0134158927	0.1971104231	0	0

SUM

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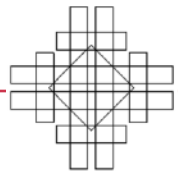

Results

Shadoks Approach to Low-Makespan Coordinated Motion Planning

Loïc Crombez
Université Clermont-Auvergne and LIMOS, France

Guilherme D. da Fonseca
Aix Marseille Université and LIS, France

Yan Gerard
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Aldo Gonzalez-Lorenzo
Aix Marseille Université and LIS, France

Pascal Lafourcade
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Luc Libralesso
Université Clermont-Auvergne and LIMOS, France

Coordinated Motion Planning Through Randomized k-Opt

Paul Liu
Department of Computer Science, Stanford University, CA, USA

Jack Spalding-Jamieson
Department of Computer Science, University of Waterloo, Canada

Brandon Zhang
Vancouver, Canada

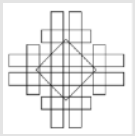
Da Wei Zheng
Department of Computer Science, University of Illinois at Urbana-Champaign, IL, USA

A Simulated Annealing Approach to Coordinated Motion Planning

Hyeyun Yang
Ulsan National Institute of Science and Technology, South Korea

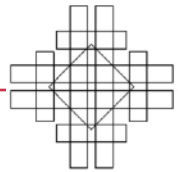
Antoine Vigneron[1]
Ulsan National Institute of Science and Technology, South Korea

Developments



- Advisory Board:
  - Bill Cook
  - Andreas Fabri
  - Michael Kerber
  - Philipp Kindermann
  - Kevin Verbeek

- Special issues



Developments

Call for problems: CG Challenge 2022

To nominate a problem, please send the following by May 28 by email to s.fekete@tu-bs.de:

- An informal description of the problem
- A pointer to previous work, if any
- Further useful information on the state of practical solutions, if any
- Contact information of the nominator

Nominators may be contacted for further details; they may also be invited to participate in running the challenge.

- Challenge 2022:
  - Call for Problems
  - **Thank you, Joe Mitchell!**
  - **Welcome, Stefan Schirra!**
- New Problem later this month
- Funding from Oct 2020-Sep 2023

Supported by:
DFG Deutsche Forschungsgemeinschaft
German Research Foundation