

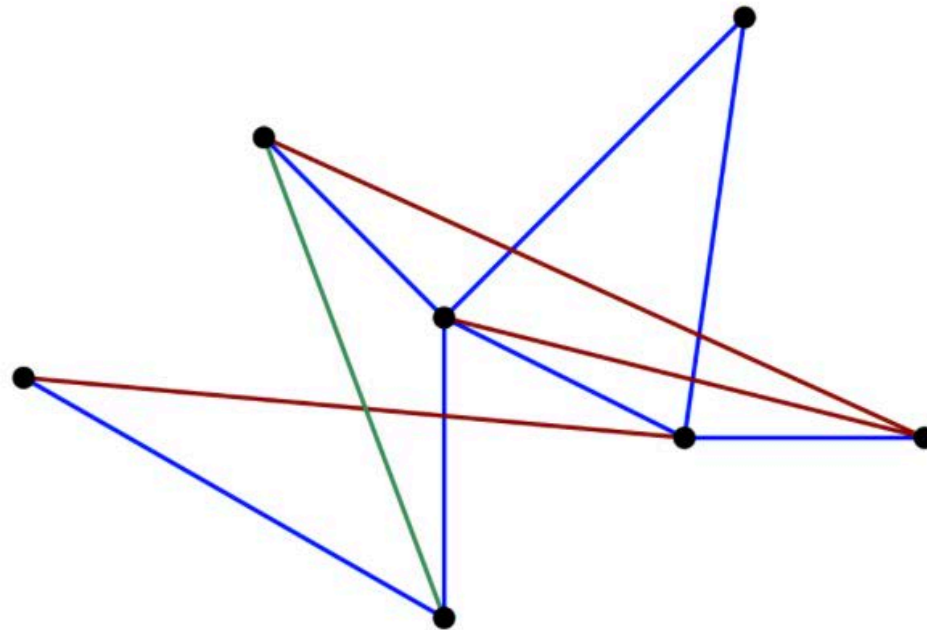
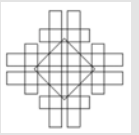


# Computational Geometry: Solving Hard Optimization Problems (CG:SHOP)

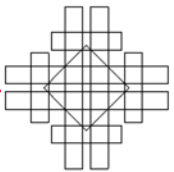
## **Optimization Challenge 2022**

**Sándor P. Fekete, Dominik Krupke,  
Phillip Keldenich, Stefan Schirra**

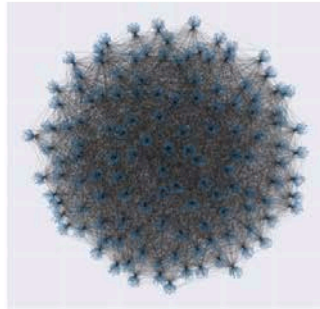
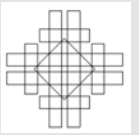
# Contest



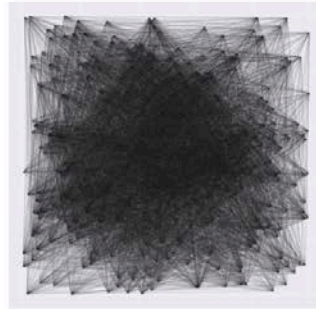
Example with a (suboptimal) partition into three plane subgraphs.



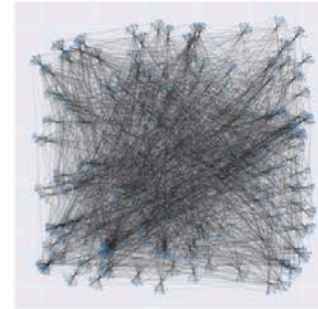
# Contest



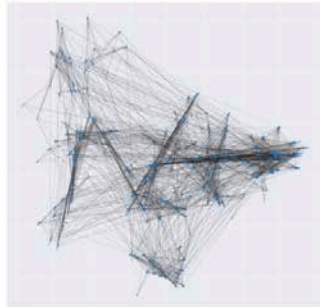
**(a)** Instance reecn6910.



**(b)** Instance sqrp7730.



**(c)** Instance sqrpecn3020.



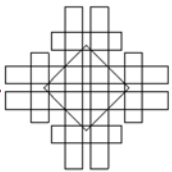
**(d)** Instance vispecn2518.

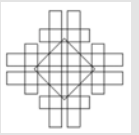


**(e)** Instance rvisp20601.



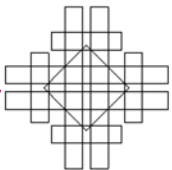
**(f)** Instance visp26405.

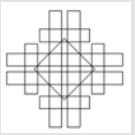




# Timeline

- May 20, 2021: Call for problems
- July 21, 2021: Announcement of problem
- August 19, 2021: Release of first test instances
- September 19, 2021: Contest instances, contest opens
- January 19, 2022: Contest closes
- March 15, 2022: Final versions of proceedings contributions due



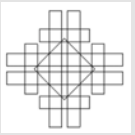


# Results

Rank	Team	Junior team	Score
1	Shadoks		225.0
2	gitastrophe		
3	LASAOFOOFUBESTINRRALLDECA		
4	TU Wien		
5	OMEGA-UHA		
6	Luiwammus		
7	Expressway65		
8	The Turtles		
9	Wouter		
10	ALGA@TUE		
11	KI Tiefensuche		
12	TheEternalProblem		
13	Die freien Denker		
15	Lapidonim		
16	Lyman Zerga		
18	Uni Bonn		
20	EA_HH		
21	H2		
25	2IMA15 Group 1		
26	TU Wien (S.A.)		
29	TUE Group 12		
31	sarkarsl		

Rank	Team	Score	Junior
1	Shadoks	225.000	
2	gitastrophe	217.486	✓
3	LASAOFOOFUBESTINRRALLDECA	211.803	
4	TU Wien	195.967	✓
5	OMEGA-UHA	144.481	
6	Luiwammus	131.275	✓
7	Expressway65	127.765	
8	The Turtles	123.600	✓
9	Wouter	122.317	✓
10	ALGA@TUE	119.213	





# Results

## Shadoks Approach to Minimum Partition into Plane Subgraphs

**Loïc Crombez** ✉

LIMOS, Université Clermont Auvergne

**Guilherme D. da Fonseca** ✉

LIS, Aix-Marseille Université

**Yan Gerard** ✉

LIMOS, Université Clermont Auvergne

**Aldo Gonzalez-Lorenzo** ✉

LIS, Aix-Marseille Université

## Conflict-Based Local Search for Minimum Partition into Plane Subgraphs

**Jack Spalding-Jamieson** ✉

David R. Cheriton School of Computer Science, University of Waterloo, Waterloo, Canada

**Brandon Zhang** ✉

No affiliation

**Da Wei Zheng** ✉

Department of Computer Science, University of Illinois at Urbana-Champaign, USA

## Local search with weighting schemes for the CG:SHOP 2022 competition

**Florian Fontan** ✉

Independent Researcher, France

**Pascal Lafourcade** ✉

Université Clermont-Auvergne, CNRS, Mines de Saint-Étienne, LIMOS, 630 France

**Luc Libralesso** ✉

Atoptima, 16 Place Sainte Eulalie, 33000 Bordeaux, France

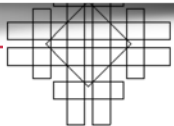
**Benjamin Momège** ✉

Independent Researcher, France

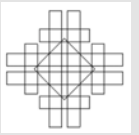
## SAT-Based Local Search for Plane Subgraph Partitions

**André Schidler** ✉

TU Wien, Vienna, Austria



# Developments



- Advisory Board:
  - ▶ Bill Cook
  - ▶ Andreas Fabri
  - ▶ Dan Halperin
  - ▶ Michael Kerber
  - ▶ Philipp Kindermann
  - ▶ Joe Mitchell
  - ▶ Kevin Verbeek
- Special issues 2019 and 2021 completed
- Call for 2023 problems imminent
- Funding until October 2023

Supported by:

**DFG** Deutsche  
Forschungsgemeinschaft  
German Research Foundation



**ACM Journal of  
Experimental  
Algorithmics**

**Volume 27, Issue**  
December 2022 | 130 pages

**ISSN:** 1084-6654

**EISSN:** 1084-6654

**DOI:** 10.1145/3505192

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## **Publisher**

**Association for Computing Machinery**  
New York, NY, United States

## **Publication History**

Online: 4 March 2022  
Published: 4 March 2022  
Accepted: 1 November 2021  
Received: 1 February 2021

