

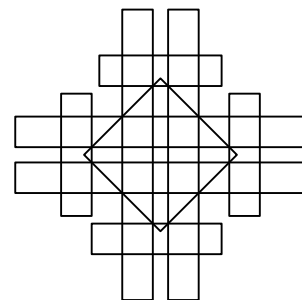
# 38th International Symposium on Computational Geometry

SoCG 2022, June 7–10, 2022, Berlin, Germany

Edited by

Xavier Goaoc

Michael Kerber



*Editors*

**Xavier Goaoc**

LORIA, Université de Lorraine, France  
xavier.goaoc@loria.fr

**Michael Kerber** 

Graz University of Technology, Austria  
kerber@tugraz.at

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## ■ Preface

The 38th International Symposium on Computational Geometry (SoCG 2022) was held in Berlin, June 7–10, 2022, as part of the Computational Geometry Week (CG Week 2022).

Altogether, 174 papers were submitted to SoCG 2022. After a thorough review process, in which each paper was evaluated by three or more independent reviewers, the program committee accepted 64 papers for presentation at SoCG 2022. These proceedings contain extended abstracts of the accepted papers, limited to 500 lines (excluding references). If any supporting material does not fit in the line limit, the full paper is available at a public repository and referenced in the corresponding extended abstract.

The **Best Paper Award** of SoCG 2022 goes to the paper “Chains, Koch Chains, and Point Sets with many Triangulations” by Daniel Rutschmann and Manuel Wettstein; this paper has been invited to submit an extended version to the Journal of the ACM. The Best Student Presentation Award was determined and announced at the symposium, based on ballots cast by the attendees. A selection of papers were invited to submit an extended version to forthcoming special issues of Discrete & Computational Geometry and the Journal of Computational Geometry dedicated to the symposium.

Two papers, “Robust Sylvester-Gallai type theorem for quadratic polynomials” and “Robust Radical Sylvester-Gallai Theorem for Quadratics”, independently prove the same main result with similar, but not identical techniques. The committee decided to include them both in the proceedings, and have them presented jointly in a single talk at the conference. The final version of each paper provides a comparison with the other paper. The final decision for all other papers was unaffected by the decision to include both papers in the proceedings.

The **SoCG Test of Time Award** of this year goes to the papers “Measuring the Resemblance of Polygonal Curves”, by Helmut Alt and Michael Godau, presented at SoCG 1992, and “Efficient Partition Trees”, by Jirí Matousek, presented at SoCG 1991.

The scientific program of CG Week 2022 was enriched by two distinguished **invited speakers**. An invited talk, entitled “Efficient Querying of Large-Scale Geodata”, was delivered by Hannah Bast from University of Freiburg. A second invited talk, entitled “Computational geometry and topology for spatial structures arising in biology”, was delivered by Heather Harrington from University of Oxford. We thank these plenary speakers for kindly accepting our invitation.

In addition to the technical papers, there were nine submissions to the **multimedia exposition**. The submissions were reviewed, and six of them were accepted for presentation. The extended abstracts that describe these submissions are included in this proceedings volume. The multimedia content can be found at <https://www.computational-geometry.org>.

A continuing feature in this year’s proceedings is the **CG Challenge**, now in its third year being included in the proceedings. The challenge problem this year was to partition a geometric graph in the plane into a small number of planar subgraphs. This year there were 32 teams submitting verified solutions, and these proceedings contain contributions by the four top-placed teams describing their winning approaches.

We thank the authors of all submitted works. We are most grateful to the members of the SoCG Program Committee, the Media Exposition Committee and the CG Challenge Committee for their dedication, expertise, and hard work that ensured the high quality of the works in these proceedings. We are grateful for the assistance provided by the hundreds



of reviewers; without their help it would have been nearly impossible to run the selection process. Finally, we thank Irina Kostitsyna, who kindly accepted to be the Proceedings Chair and did meticulous work.

Many other people contributed to the success of SoCG 2022 and the entire CG Week. We are very grateful to the local organization committee for their work in organizing the event, and to facilitate remote participation. Finally, we thank all the members of the Test of Time Award, Workshop, and Young Researchers Forum Committees, the CG Challenge Advisory Board, and the Computational Geometry Steering Committee.

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Felix Klesen	Bengt J. Nilsson	Marcus Schaefer
Fabian Klute	Navid Nouri	Christian Scheffer
Dušan Knop	André Nusser	Anna Schenfisch
Benedikt Kolbe	Martin Nöllenburg	Manfred Scheucher
Matias Korman	Joseph O'Rourke	Arne Schmidt
Irina Kostitsyna	Eunjin Oh	Patrick Schnider
Grigorios Koumoutsos	Yoshio Okamoto	Jordan Schupbach
Hana Kourimska	Osman Okutan	Chris Schwiegelshohn
Myroslav Kryven	Tim Ophelders	Martina Scolamiero
Nirman Kumar	Steve Oudot	Mordechai Shalom
Marvin Künnemann	Rasmus Pagh	Vikram Sharma
Elmar Langetepe	Peter Palfrader	Nicholas Sharp
Sylvain Lazard	Fahad Panolan	Chan-Su Shin
Francis Lazarus	Evanthia Papadopoulou	Devansh Shringi
Hung Le	Irene Parada	Anastasios Sidiropoulos
Vadim Lebovici	Salman Parsa	Francesco Silvestri
Dongryeol Lee	Amit Patel	Berit Singer
Michael Lesnick	Pavel Paták	Isabelle Sivignon
Jian Li	Francois Petit	Primoz Skraba
Tongyang Li	Seth Pettie	Michiel Smid
Jyh-Ming Lien	Jeff Phillips	Pablo Soberón
Sunhyuk Lim	Madhusudhan Reddy Pittu	József Solymosi
Jiashuai Lu	Valentin Polishchuk	Bettina Speckmann
Anna Lubiw	Marc Pouget	Jonathan Spreer
Benjamin Lund	Siddharth Pritam	Frank Staals
Hengrui Luo	Ioannis Psarros	Raphael Steiner
Maarten Löffler	Dömötör Pálvölgyi	Elizabeth Stephenson
Sushovan Majhi	Sharath Raghvendra	Miloš Stojaković
Willi Mann	Saladi Rahul	Martin Suderland
Mathieu Mari	Benjamin Raichel	Andrew Suk
Killian Meehan	Rajiv Raman	Yihan Sun
Facundo Memoli	Jan Rataj	Konrad Swanepoel
David L. Millman	Abhishek Rathod	Shuhao Tan
Till Miltzow	Meghana M Reddy	Martin Tancer
Majid Mirzanezhad	Vanessa Robins	Ewin Tang
Guillaume Moroz	Liam Roditty	Erin Taylor
Dmitriy Morozov	Dennis Rohde	Monique Teillaud
David Mount	Alexander Rolle	Francesca Tombari
Michael Moy	Pepijn Edwin Robert	Csaba Tóth
Wolfgang Mulzer	Roos Hoefgeest	Geza Tóth
Elizabeth Munch	Günter Rote	Manuel Trigueros
Tobias Mömke	Cameron Rudd	Konstantinos Tsakalidis
Torsten Mütze	Florian Russold	Takashi Tsuboi
Chie Nara	Daniel Rutschmann	Jan Vahrenhold
Abhinandan Nath	Leonie Ryvkin	Mikael Vejdemo-Johansson
Ofer Neiman	Morteza Saghafian	Kevin Verbeek
Eike Neumann	Michael Sagraloff	Antoine Vigneron

Ziga Virk  
Hubert Wagner  
Bartosz Walczak  
Zhengchao Wan  
Bei Wang  
Qingsong Wang  
Yanhao Wang  
Simon Weber  
Manuel Wettstein  
Max Willert  
Mathijs Wintraecken

Sampson Wong  
David R. Wood  
Matthew Wright  
Jie Xue  
Sang Duk Yoon  
Jingjin Yu  
Joshua Zahl  
Nicolò Zava  
Ji Zeng  
Sebastian Zeng  
Shira Zerbib

Da Wei Zheng  
Ling Zhou  
Samson Zhou  
Mark de Berg  
Sarita de Berg  
Stefan de Lorenzo  
Vin de Silva  
André van Renssen  
Tom van der Zanden  
Péter Ágoston  
Onur Çağırıcı

