

42nd International Symposium on Computational Geometry

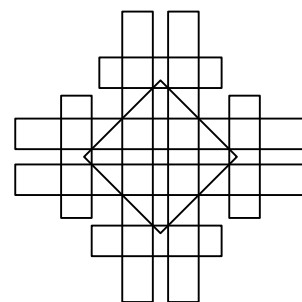
SoCG 2026, June 2–5, 2026, New Brunswick, NJ, USA

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Preface

The 42nd International Symposium on Computational Geometry (SoCG 2026) was held in New Brunswick, NJ, USA, June 2–5, 2026, as part of the Computational Geometry Week (CG Week 2026).

To strengthen and promote research on practical aspects of computational geometry and topology, as well as connections to other fields, SoCG 2026 introduced a new track that specifically focuses on these aspects, such as implementation and software, engineering, experimentation, and applications. Thus, for the first time in 25 years, the submission and review process was organized in two tracks: Track P (Practice) and Track T (Theory). Authors could also specify that their submission falls in between the tracks if it makes relevant contributions of both theoretical and practical nature.

The symposium received a record number of 272 submissions, of which 217 were for Track T, 40 in between, 14 for Track P, and one was withdrawn later. After a thorough review process, in which each paper was evaluated by several (typically three or four) independent reviewers, the program committee accepted 95 papers for presentation, of which 76 were from Track T, 13 in between, and 6 from Track P. 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, it is persistently available at a public repository and referenced in the corresponding extended abstract.

The Best Theory Paper Award of SoCG 2026 went to the paper “On the size of k -irreducible triangulations” by Vincent Delecroix, Oscar Fontaine and Arnaud de Mesmay. The Best Practice Paper Award of SoCG 2026 went to the paper “Constructing Doppelgängers of Greedy Geometric Spanners in Practice” by Anirban Ghosh. The Best Student Paper Award of SoCG 2026 went to the paper “Fréchet Distance in the Imbalanced Case” by Lotte Blank. The Best Student Presentation Award was determined and announced at the symposium, based on ballots cast by the attendees. A selection of papers was invited to submit extended versions to forthcoming special issues of *Discrete & Computational Geometry* (DCG) and the *Journal of Computational Geometry* (JoCG) dedicated to the symposium.

The SoCG Test of Time Award 2026 went to “An efficient algorithm for planning collision-free translational motion of a convex polygonal object in 2-dimensional space amidst polygonal obstacles” by Klara Kedem and Micha Sharir, published in SoCG 1985, and to “Locality-sensitive hashing scheme based on p -stable distributions” by Mayur Datar, Nicole Immorlica, Piotr Indyk and Vahab S. Mirrokni, published in SoCG 2004.

The scientific program of CG Week 2026 was enriched by two distinguished invited speakers. An invited talk “From shape comes meaning: Bringing geometric intuition to the ethics of AI” was given by Suresh Venkatasubramanian from Brown University. A second invited talk “New directions in sublinear time algorithms” was delivered by Ronitt Rubinfeld from the Massachusetts Institute of Technology. We thank the plenary speakers for kindly accepting our invitation.

In addition to the technical papers, there were nine submissions to the multimedia exposition. Submissions were reviewed and all 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://computational-geometry.org/cg-week/media-exposition/2026/>.



The 8th Computational Geometry Challenge was part of CG Week 2026. The challenge problem was about finding a central triangulation under parallel flip operations. This year, eighteen teams participated in the challenge. These proceedings contain contributions by the four top-placed teams describing their winning approaches.

We thank the authors of all submitted contributions. We are most grateful to the members of the SoCG Program Committee, the Media Exposition (CG:ME) 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 external reviewers; without their help, it would have been impossible to run the selection process. Last but not least, we thank Philipp Kindermann for his meticulous work as the Proceedings Chair.

Many other people contributed to the success of SoCG 2026 and the entire CG Week. We are very grateful to the local organizers for their work in organizing the event. Finally, we thank all the members of the Test of Time Award Committee, the Young Researchers Forum (CG:YRF) Committee, the CG Challenge Advisory Board, the CG Society Board, the CG Society IT Committee, and the CG Steering Committee.

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■ Conference Organization

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