33rd International Symposium on Graph Drawing and Network Visualization

GD 2025, September 24–26, 2025, Norrköping, Sweden

Edited by

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Preface

This volume contains the papers presented at GD 2025, the 33rd International Symposium on Graph Drawing and Network Visualization, held during September 24–26, 2025 in Norrköping, Sweden. Graph Drawing is concerned with the geometric representation of graphs and constitutes the algorithmic core of Network Visualization. Graph Drawing and Network Visualization are motivated by applications where it is crucial to visually analyze and interact with relational datasets. Examples of such application areas include data science, social sciences, Web computing, information systems, biology, geography, business intelligence, information security and software engineering.

The symposium on Graph Drawing and Network Visualization has been the main annual event in this area for more than 30 years. Its focus is on combinatorial and algorithmic aspects of graph drawing as well as the design of network visualization systems and interfaces. Information about the conference series and past symposia is maintained at `http://www.graphdrawing.org`.

A total of 94 participants from 18 different countries attended the conference. Regular papers could be submitted to one of two distinct tracks: Track 1 for papers on fundamental theoretical graph drawing advances, such as on combinatorial and algorithmic aspects, and Track 2 for papers on practical aspects of graph drawing, such as experimental, applied, and network visualization aspects. Short papers were given a separate category, which welcomed both theoretical and applied contributions. An additional track was devoted to poster submissions.

All the tracks were handled by a single Program Committee. As in previous editions of GD, the papers in the different tracks did not compete directly with each other, but all Program Committee members were invited to review papers from any track in a "lightweight double-blind" process.

In response to the call for papers, the Program Committee received a total of 111 submissions, consisting of 96 papers (38 in Track 1, 33 in Track 2, and 25 in the short paper category) and 15 posters. More than 300 reviews were provided, about 40% having been contributed by external sub-reviewers. After extensive electronic discussions by the Program Committee via EasyChair, interspersed with virtual meetings of the Program Chairs producing incremental accept/reject proposals, 31 long papers, 7 short papers, and 13 posters were selected for inclusion in the scientific program of GD 2025. This resulted in an overall paper acceptance rate (not considering posters) of 39.6% (50.0% in Track 1, 36.4% in Track 2, and 28% in the short paper category). As is common in GD, some hard choices had to be made in particular during the final acceptance/rejection round, where several papers that clearly had merit still did not make the cut. However, the large number of high-quality submissions reflects the strength of the community.

For the second time in GD history, the proceedings are published by LIPIcs. The excellent support by the Dagstuhl LIPIcs team and by the GD 2024 Program Chairs helped to streamline the process.

There were two invited talks at GD 2025. Hans Bodlaender from Utrecht University (Netherlands) gave a survey about several central notions from parameterized complexity and discussed some recent developments, including the classes XNLP and XALP. Huamin Qu from Hong Kong University of Science and Technology (HKUST) discussed how to transform graph visualization through AI and human-AI Collaboration. Abstracts of both invited talks are included in these proceedings.

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The conference gave out best paper awards in Track 1 and Track 2, as well as a best presentation award and a best poster award. The award for the best paper in Track 1 was given to "Characterizing and Recognizing Twistedness" by Oswin Aichholzer, Alfredo Garcia, Javier Tejel, Birgit Vogtenhuber and Alexandra Weinberger, and the award for the best paper in Track 2 was given to "OOPS: Optimized One-Planarity Solver via SAT" by Sergey Pupyrev. Based on a majority vote of the conference participants, the best presentation award was given to Benedikt Hahn for the presentation of "Edge densities of drawings of graphs with one forbidden cell" and the best poster award was given to Cristiano Bernardini, Davide Campanelli, Walter Didimo, Luca Grilli, Giuseppe Liotta and Benedetto Ponti for the poster titled "TReView: Visualizing the European Union Transparency Register".

A PhD School was held on the two days prior to the conference. Four half-day sessions led by Sara Di Bartolomeo, Markus Chimani, Daniel Archambault, and Camilla Forsell covered both theoretical and practical topics in graph drawing and network visualization.

As is traditional, the 32nd Annual Graph Drawing Contest was held during the conference. The contest was divided into two parts, creative topics and the live challenge. The creative topics task featured a single graph representing the events and characters from the Netflix series Dark, which centers on time travel. Since a special dataset requires a special setting, the submissions received for the contest were displayed in the Norrköping Decision Arena, a state-of-the-art facility featuring a 360-degree screen allowing the audience to immerse themselves in the visualizations. The live challenge focused on minimizing the local crossing number of drawings on a restricted integer grid. There were two categories: manual and automatic. We thank the Contest Committee, chaired by Fabian Klute, for preparing interesting and challenging problems. A report on the contest is included in these proceedings.

Many people and organizations contributed to the success of GD 2025. We would like to thank all members of the Program Committee and the external reviewers for carefully reviewing and discussing the submitted papers and posters; this was crucial for putting together a strong and interesting program. We would also like to thank all authors who chose GD 2025 as the publication venue for their research.

We are grateful for the support of our "Platinum" sponsor Carl Tryggers Foundation for Scientific Research, our "Gold" sponsors Tom Sawyer Software and yWorks, our "Silver" sponsor Visual Sweden, and our contributors Visualiseringscenter C and Linköping University. Their generous support helped to ensure the continued success of this conference. Furthermore, we would like to thank the LIPIcs team for their support during the creation of these proceedings.

Our special thanks go to all the members of the organizing committee based at Linköping University, in particular to the co-chairs Andreas Kerren and Kostiantyn Kucher.

The 34th International Symposium on Graph Drawing and Network Visualization (GD 2026) will take place during August 19-21, 2026, in St. Catharines, ON, Canada and will be hosted by Brock University. Debajyoti Mondal and Rahnuma Islam Nishat will co-chair the Organizing Committee, and Maarten Löffler and Silvia Miksch will co-chair the Program Committee.

October 2025 Vida Dujmović and Fabrizio Montecchiani

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