Journal of Visualization and Interaction
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Issue #11 (open): [REVIEW] GLADOS: Graph Layout Algorithm Benchmark Datasets for Open Science â€“ GD Benchmark Sets

@eelir on Mar 19, 2025 19:48: [opened]

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Conflicts of interest

- ☒ I declare that I have no known conflicts of interest with the authors.

Reviewed version

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Review

The paper presents a well-organized and valuable resource for benchmarking graph layout algorithms, addressing the need for standardized datasets. The authors compile existing datasets, reconstruct lost ones, and categorize them for easy access. Their work enhances reproducibility in graph visualization research and helps ensure that datasets remain accessible for future studies.

Strengths

- Comprehensive Dataset Collection â€“ The authors have systematically gathered and archived datasets from 196 papers, ensuring their long-term availability. This extensive effort makes it easier for researchers to access past datasets without struggling to track them down.
- Reproducibility and Accessibility â€“ The datasets are stored on the Open Science Framework (OSF) and made available in multiple formats (JSON, GraphML, GEXF, GML), which increases usability for a broad range of researchers and practitioners.
- A Structured Taxonomy â€“ The categorization of datasets (Uniform Benchmark, Established Network Repository, etc.) provides a clear and useful way to navigate and select relevant datasets based on specific research needs.
- Replicability Focus â€“ The study directly addresses the issue of â€œlink rotâ€ by documenting and preserving datasets that were previously inaccessible. This is a major step toward improving research sustainability in the field.
- Technical Implementation â€“ The paper provides clear details on the data collection process, dataset characteristics, and visualization tools, demonstrating a rigorous and thoughtful approach.

Weaknesses

- Usability and Search Functionality â€“ While the Graph Layout Benchmark Datasets is a great idea, I feel that an advanced search functionâ€”or even a simple keyword-based searchâ€”would greatly improve usability for practitioners. This would make finding appropriate datasets much easier and feels like a missed opportunity.
- Data Consistency Verification â€“ There is no clear mention of how data consistency was verified across different sources. Since datasets come from various papers, it would be useful to know what steps were taken to ensure accuracy and reliability.
- Potential Bias in Dataset Selection â€“ The paper does not clarify whether there were any biases in how datasets were selected or reconstructed. A brief discussion on this would strengthen the transparency of the work.

Final Recommendation

Although this paper does not follow the structure of a conventional research paper and feels more like a dataset report, I believe it is a strong and valuable contribution to the field. The effort to compile, organize, and preserve graph layout benchmark datasets is highly relevant and beneficial for researchers working in graph visualization.

With minor revisions addressing usability improvements, data verification methods, and dataset selection biases, I believe this paper would be well-suited for publication in the Journal of Visualization and Interaction.

Openness/Transparency

The paper is very open and transparent. The datasets are publicly available on OSF in multiple formats, making them easy to use. The data collection process is well explained, and the authors share their code on GitHub, helping others build on their work.

One small improvement could be clearer details on how they checked data accuracy and any biases in dataset selection. But overall, this work is easy to use and a great resource for future research.

Submission categories

- ☐ Registered Report
- ☐ Replication Study
- ☐ Empirical Research - Quantitative
- ☐ Empirical Research - Qualitative
- ☐ Systems or design research
- ☐ Commentary
- ☒ Systematic Literature Review

Suggested outcome

Minor revisions: this paper requires some smaller changes, after which I am confident I would be able to endorse it.

Requested changes

- Improve Search Functionality of the Web Page (if applicable) â€“ The dataset collection is valuable, but adding a search feature (even a basic keyword-based one) would make it much easier for researchers to find relevant datasets.
- Clarify Data Consistency Checks â€“ There is no clear mention of how the authors ensured data accuracy and consistency across different sources. A brief explanation would strengthen transparency.
- Discuss Potential Bias in Dataset Selection â€“ Since some datasets were reconstructed, it would help to include a short note on how the selection process might introduce bias and what was done to minimize this.

ORCID

0000-0001-6745-4398

@eelir on Mar 19, 2025 19:49:	[closed]
@eelir on Oct 03, 2025 09:12:	Endorse:* I am willing to endorse this paper, with at most minor copyediting.
@eelir on	

Oct 03, 2025 09:12:	[closed]
@floe on Dec 17, 2025 08:02:	Reopening so that all reviews are visible on the main issue page.