



The State of Reproducibility Stamps for Visualization Research Papers

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Motivation

- "A scientific result is not truly established until it is independently confirmed." [Boisvert, 2016]
- we need code & data () GitHub () GitLab () SF







- code & data not enough
 - is it documented? does it run?
 - does it produce the promised results?

 Graphics Replicability Stamp Initiative replicabilitystamp.orq

[Bonneel et al., 2020]



Terminology

- reproducibility: same setup, different team
- replicability: different setup, different team

[Claerbout and Karrenbach, 1992]

- replicability: same setup, different team reproducibility: different setup, different team



- reproducibility: same setup, different team
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Data Collection





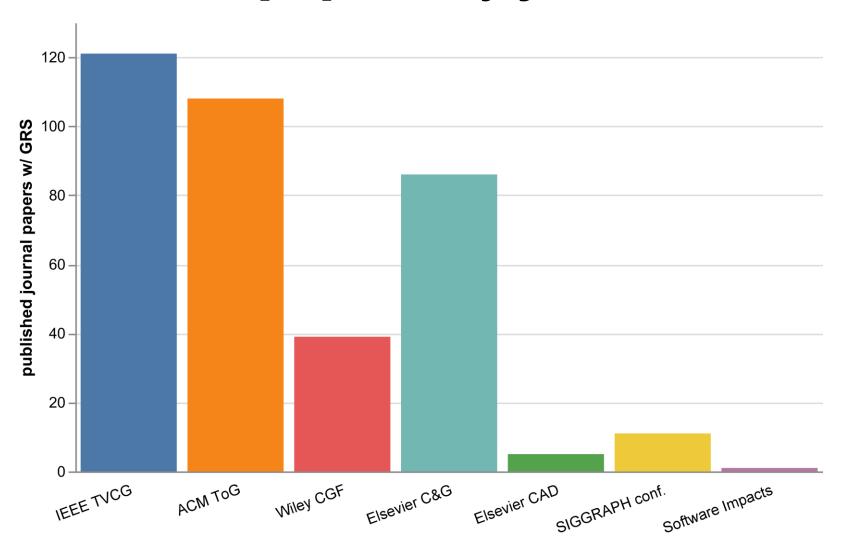








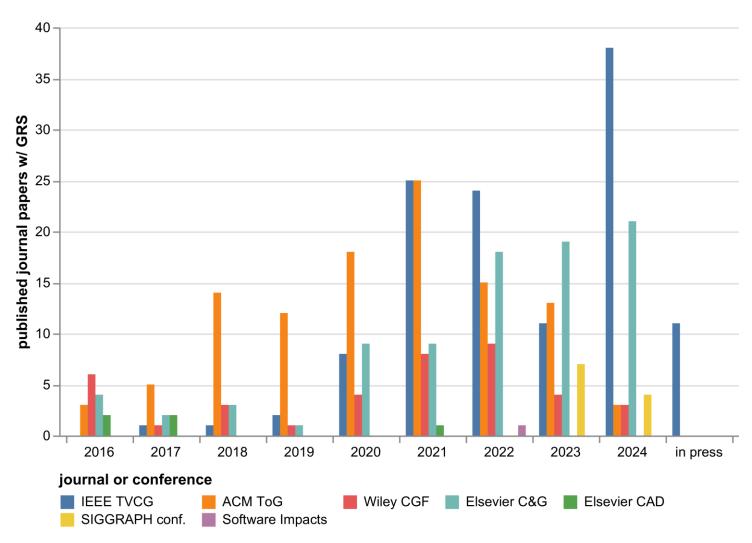
GRSI-certified papers by journal*



^{*} in 2024 SIGGRAPH conference papers were added as a venue

(data and plots current as of today)

GRSI-certified papers by year

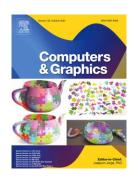


Visualization or not?



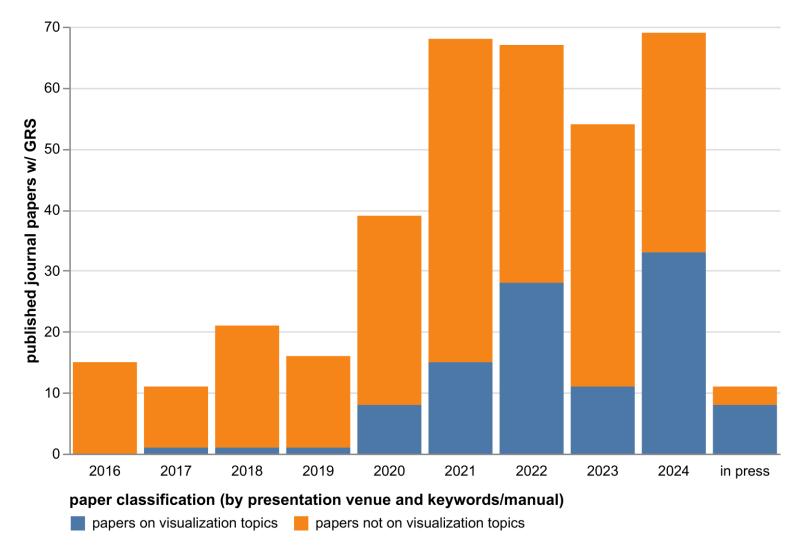


PACIFIC VIS

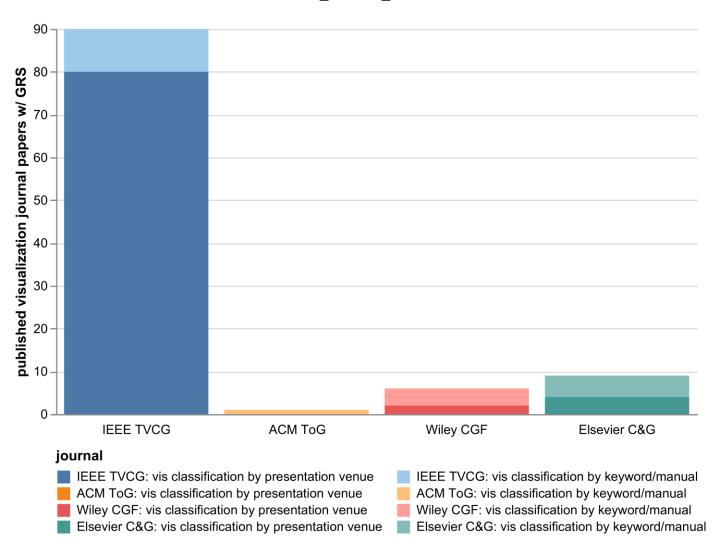




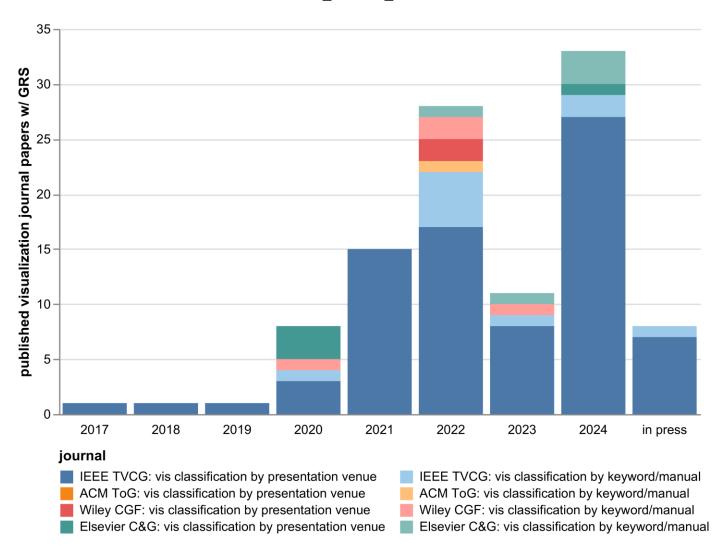
+ keywords (10.4%) + manual (8.5%)



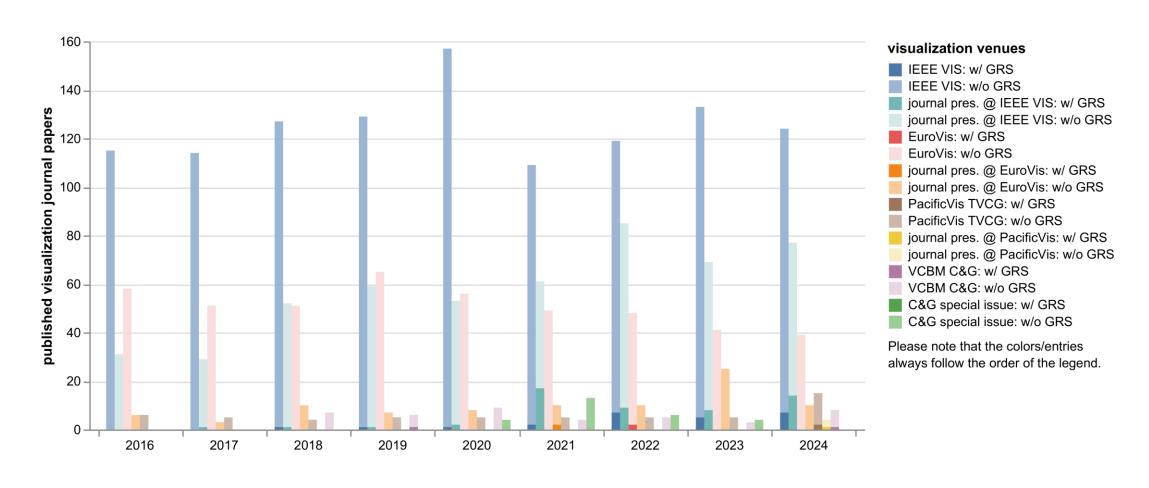
Where do VIS GRSI papers come from?



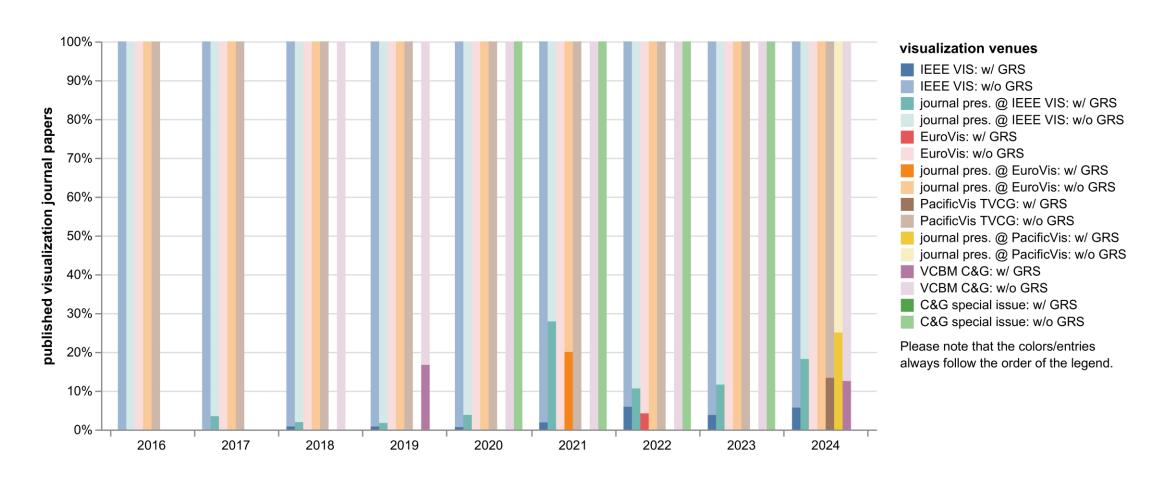
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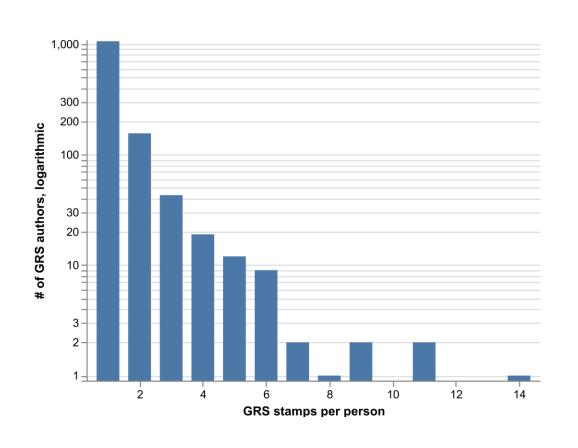
VIS GRSI contributions by presentation venue

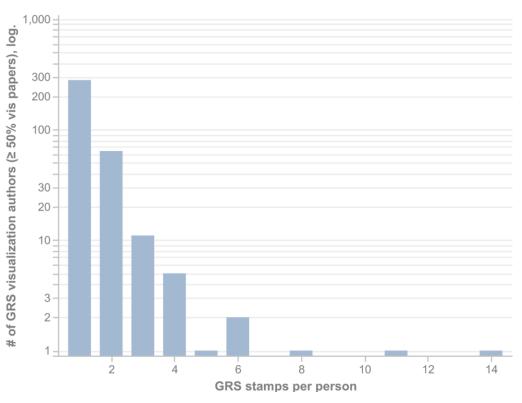


VIS GRSI proportions by presentation venue



of GSRI stamps per author

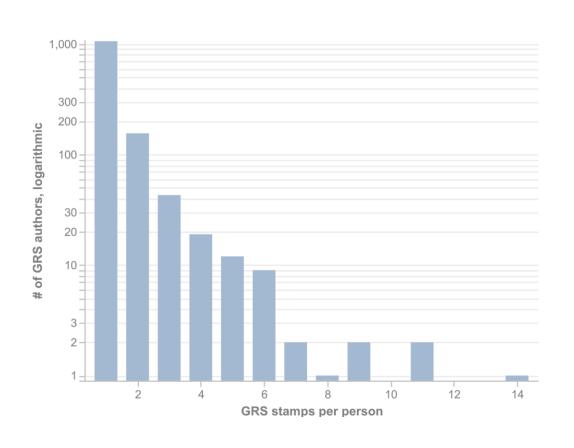


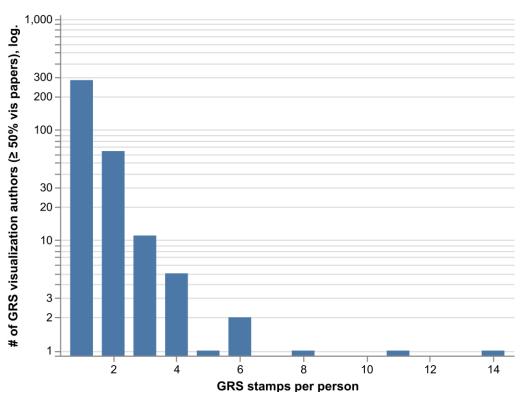


all GRSI authors

VIS-only GRSI authors

of GSRI stamps per author

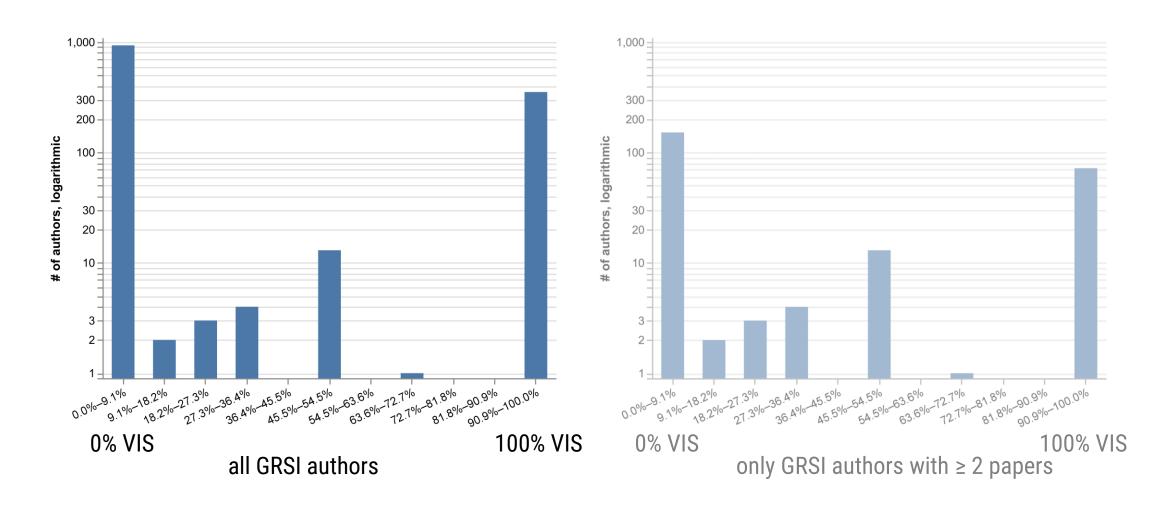




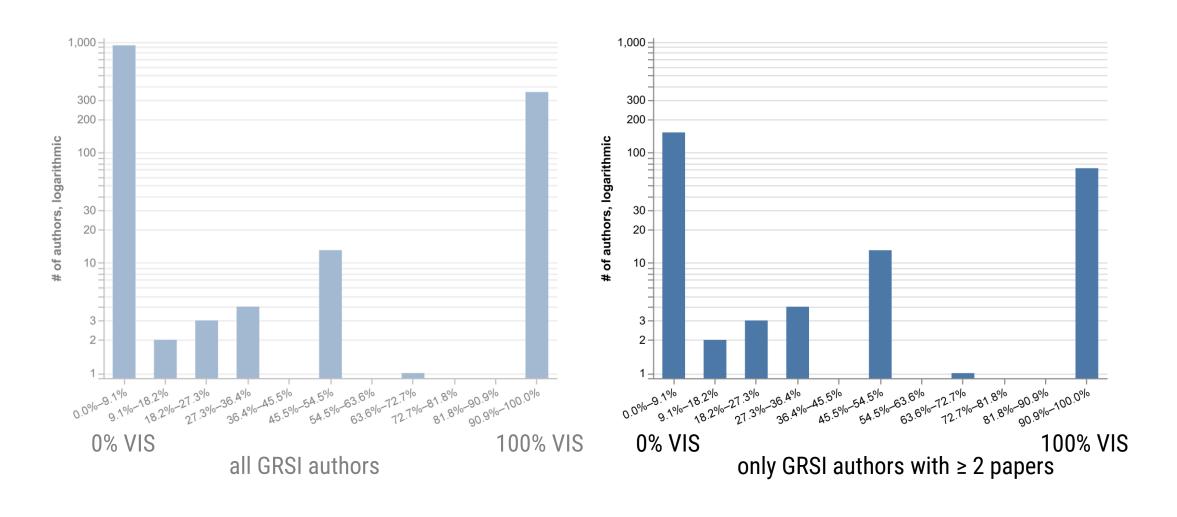
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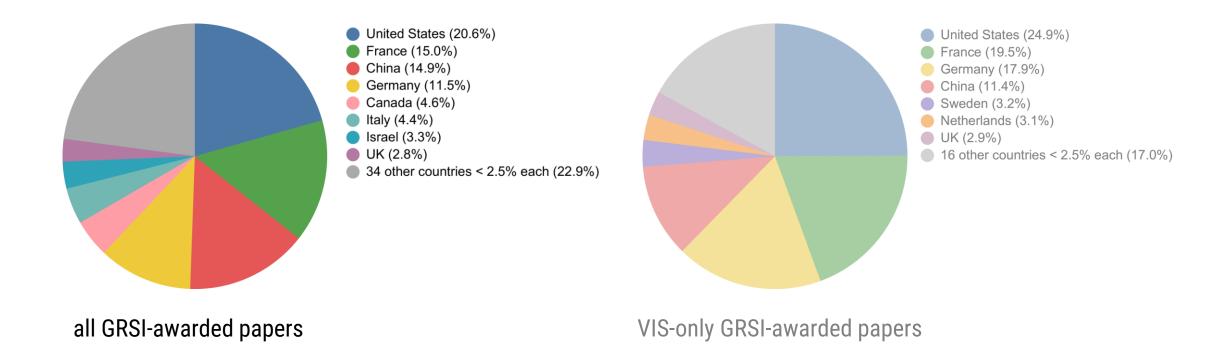
Author split between VIS and not VIS



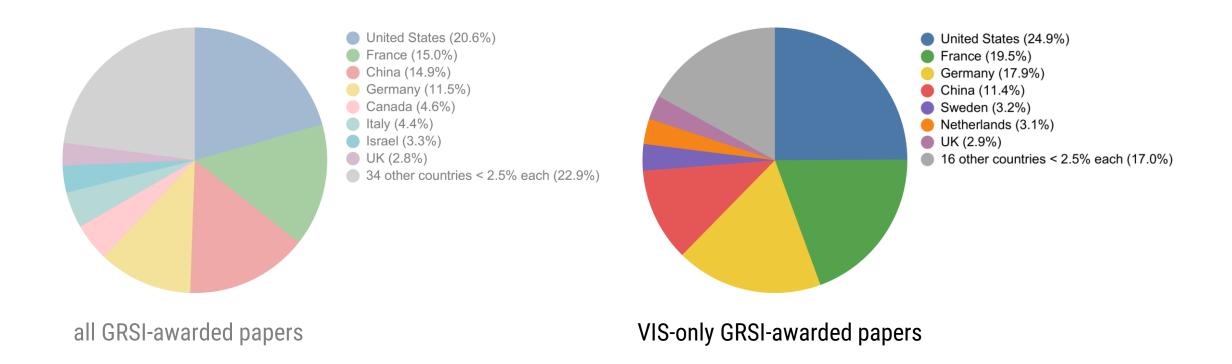
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Contributions by country

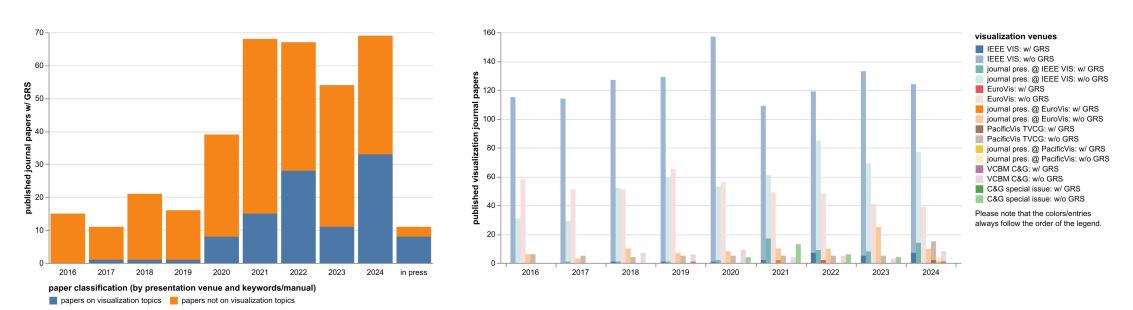


Contributions by country



Discussion

- numbers are increasing, but still low
 - 28.6% of GRSI papers are from VIS (106 out of 371)
 - from all full IEEE VIS papers 2021-24: only 21 or 4.3% have a GRS
 - for TVCG presentations @ VIS 2021-24: 48 or 19.8% have a GRS



GRSI not well enough known among authors
 → need to advertise better; but things are improving

State of the Journal S 2017 is drawing to a close. I am delighted to report that TVCG is in an excellent state and to announce that the 2016 A \$2017 is drawing to a close, I am delighted to report that IVLU is in an exceitent state and to autocure this time and 2-year impact factors for IVCG rose to 2-840, which is the highest of its impact factors since is in neception. The number of submissions has been steadily growing over the years. In 2016, TVCG received 388 new submissions, which is the largest number of submissions in a single year in the history of the journal. By the end of November 2017, the number of new submissions reached 385 (not including those for the special issues) and, by the end of 2017, we expect TVCG to reach a record high number of submissions in a single year. We have continued expanding the TVCG editorial board with the appointment of eleven new associate editors in 2017, thereby replacing the four associate editors who "graduated" in the same year. The number of editorial board members in the last three years has increased by more than 40 percent hereby promoting gender diversity and maintaining a balanced geographical distribution.

The IEEE VIS 2016 conference issue, containing the Proceedings of the IEEE Information Visualization, IEEE Scientific Visualization, and IEEE Visual Analytics Science and Technology 2016 Conferences, has been published as the TVCG January 2017 issue. Similarly, the VIS 2017 conference issue already appeared as the TVCG January 2018 issue. The Proceedings of the IEEE Virtual Reality Conference (VR 2017) and of the IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2017) have been published as the April and November 2017 issues, respectively, of TVCG. We observed 448, 174, and 117 submissions to IEEE VS 2016, IEEE VR 2017 and IEEE IS-MAR 2017, respectively, with an increase in submissions of more than 30 percent for VR and ISMAR with respect to 2016. Moreover, the five best papers from the IEEE Pacific Visualization Symposium (IEEE Pacific Vis 2017) have been directly published as a special section in the June 2017 issue of TVCG. The total number of papers published in 2017 is 232, distributed among twelve issues, accounting for a total of 2,660 printed pages. The IEEE VIS special issue contains 100 papers, which account for 43 percent of the journal content in 2017 while the IEEE VR and IEEE ISMAR special issues contain 16 papers and 14 papers, respectively. The PacificVis 2017 special section contains the five best papers from the symposium, selected from 29 papers accepted out of 99 submissions. All submissions in the special issues, including the PacificVis special section, went through a rigorous two-round journal-quality review process directly overseen by TVCG. In 2017, we also published extended versions of best papers from the ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (3D) 2016 and from the ACM SIGGRAPH/ Eurographics Symposia on Computer Animation (SCA) 2015 and 2016. TVCG continues to offer authors a remarkable efficient processing of submitted manuscripts: the average time from submission to the first decision is about to 75 days. In 2017, as in the last few years, the authors of TVCG regular papers have been invited to give an oral presentation of their papers at TVCG's partner conferences. We have been successfully continuing the path of collaboration with the conferences for which TVCG publishes the proceedings as special issues, in scientific and information visualization, in visual analytics, and in virtual and augmented reality. We have also seen an increasing number of partner conferences in computer graphics, animation and geometric modeling, that enable authors of accepted TVCG graphics papers to present their work. This arrangement continues to provide a unique opportunity for the audience of all these conferences to keep abreast of high-quality research featured in TVCG, while encouraging more TVCG authors to attend these conferences. This partnership has been very well received by conference attendees and by TVCG authors. TVCG has been invited to organize very well attended sessions in the areas of visualization, and of augmented and virtual reality, both at SIGGRAPF 2017 and at SIGGRAPH Asia 2017, where we featured the best papers published in TVCG in those areas. Some exemplary work of TVCG with more general appeal has been featured in IEEE Computer, and Computing Now. TVCG participates in the Code Ocean initiative launched by IEEE on February 2017, which provides a new service for distributing a paper's accompanying code in a way that integrates with that paper's listing in IEEE Xplore. Code Ocean's platform enables authors to upload and configure their code to run in the cloud so that it is fully executable, and citable All authors of papers that have been submitted to TVCG or have been recently accepted to TVCG are invited to try out thi free service by going to https://codecean.com/ieee/signup. TVCC participates also in the IEEE DataPort trial, which started in October 2017. IEEE DataPort (https://ieeee-dataport.org) is a new IEEE data service now available to all IEEE members, and to the global technical community. All TVCG authors have direct access to IEEE DataPort and the opportunity to store their datasets up to 2TB in size, which can be loaded anytime during paper submission or after acceptance and can be referenced with a unique and persistent DOI (Digital Object Identifier)

Looking forward to 2018. I expect TVCG to continue this very positive trend in submissions and to attract even more readers, authors, and subscribers. Since the basis for any future improvement in the usefulness and reputation of TVCG lies in increasing the number of high-quality submissions. I encourage members of the visualization, computer graphics, and virtual and augmented reality communities to submit their best and latest research results to TVCG. In particular, TVCG welcomes and encourages the submission of survey pupers in all areas in its scope. Survey papers are meant to be easily accessible to non-experts and are designed to provide a theoretically, integrative, up-to-date, and comprehensive narraments of the companies of the provide and the complex in the comprehensive parts point out existing trends, enable a critical comparison of existing research efforts and results, and in some occasions also shed a light on developments in the commercial areas. We have recently posted a specific call for VIS Surveys, which are survey papers with a VIS theme, to be presented at the annual VIS conference.

If am pleased to announce that, starting in 2018; VTCC-will participate in the Graphics Repticality Stamp Initiative Outpet// owev replicability stamp initia



2020: 1 paper, 0.6%

2021: 2 papers, 1.8%

2022: 7 papers, 5.9%

2023: 5 papers, 3.8%

2024: 7 papers, 5.6%

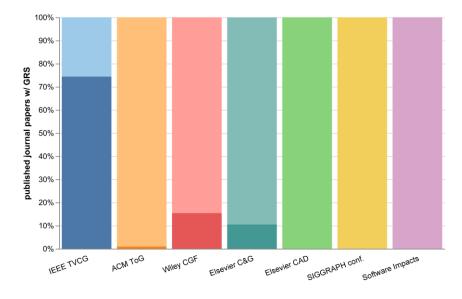
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 - → need to advertise better; but things are improving
- lack of incentives, extra work, only eternal fame and glory
 - → more incentives (awards?); but GRSI helps you, too!



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 - → can we change that?



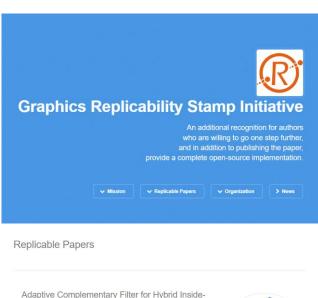
(Zoom) meetup: Thursday, Oct 17, 3:15pm Tampa, 21:15 Europe



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- commercialization intents/proprietary code

Reproducible paper writing



daptive Complementary Filter for Hybrid Inside-Out Outside-In HMD Tracking with Smooth

Riccardo Monica, Dario Lodi Rizzini, Jacopo Aleotti IEEE Transactions on Visualization and Computer Graphics (TVCG)









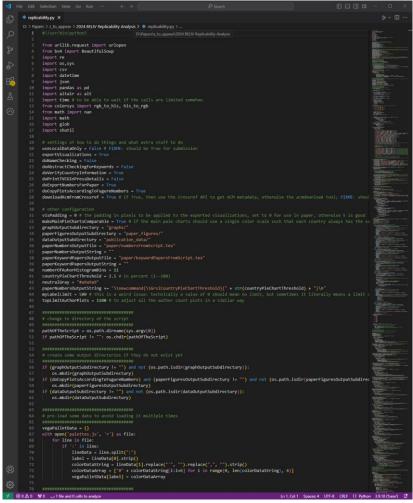
A Testbed for Studying Cybersickness and its Mitigation in Immersive Virtual Reality

Davide Calandra, Fabrizio Lamberti
IEEE Transactions on Visualization and Computer Graphics (TVCG)

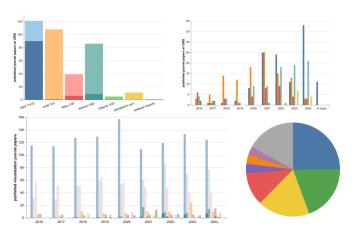


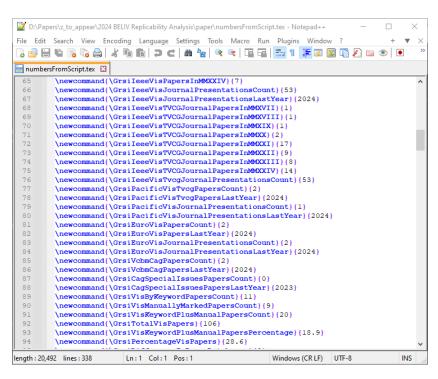
≛ Repository











Paper, data, code, more information

- GitHub repo: tobiasisenberg/Visualization-Reproducibility
- URL: tobias.isenberg.cc/p/lsenberg2024SRS

- to fully reproduce:
 - python™ (data frozen from final paper time)
 - then \LaTeX
- to get updated data:
 GitHub documentation





thanks:

- GRSI organizers/reviewers
- data providers (vispubdata, Stefanie Behnke, Ross Maciejewski, Lane Harrison, VIS 2024 papers chairs)
- repository feedback: Cody Dunne
- reviewer & arXiv feedback