



IEEE Reproducibility Practices Survey - Summary of Findings

Fourth Quarter 2020

Requested by: IEEE Publications

Report Prepared by: IEEE Strategic Research

Notes and Recommendations for the Survey Report

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There are two sections in which data is summarized in this report; key findings and frequency tables.

The key findings section summarizes the data using narrative, tables, and graphs. Findings are ordered in a way that makes sense for the reader; therefore, questions do not necessarily follow the order in which they come in the frequency report or survey instrument.

The frequency tables section contains summary tables and graphs for each question (or variable) measured in the study. The order of the report is the order in which the questions were presented to the respondents. When making presentations, you may want to re-order these.

Scale questions typically have both a table with numbers and a graph. For presentations, you may want to delete the tables and present only the graphs. Data presented in tables also typically includes both the raw numbers and the percentages. For presentations, you may want to only present one of these, depending on your particular study.

Open-ended questions include all answers by all respondents, without editing or spell-checking. You may want to move these to the end, edit, or pull out example quotes for use in a presentation.

Abstract

The purpose of the IEEE Reproducibility Practices Survey was to assess reproducibility practices within IEEE journals, magazines and conferences. 422 IEEE Conference Organizers, Magazine Editor in Chiefs, and Journal Editor in Chiefs were surveyed using a self-administered, online questionnaire. *Results:* About four in ten IEEE conferences, magazines, or journals either have policies in place to support the computational reproducibility of published results (21%) or are planning to institute policies in the future (20%).

Methodology

Operating Unit: Publications

Requester: Gerry Grenier, Manish Parashar

Purpose: to assess reproducibility practices within IEEE journals, magazines and conferences

Data Collection Started: 24 September 2020

Data Collection Ended: 16 November 2020

Sample: 422 IEEE Conference Organizers, Magazine Editor in Chiefs, and Journal Editor in Chiefs

Response: 132 – Response rate of 31%

Margin of Error: An exact margin of error has not been calculated due to the small population size. A general rule of thumb is that approximately half of a small population provides high confidence in the findings)

Key Findings

- About four in ten IEEE conferences, magazines, or journals either have policies in place to support the computational reproducibility of published results (21%) or are planning to institute policies in the future (20%).
- Six in ten IEEE conferences, magazines, or journals do not have any policies in place to support the computational reproducibility of published results.

Of those with reproducibility practices planned or in place:

- Six in ten (62%) allow results to be submitted, about five in ten allow code (52%) or system/software details (48%) to be submitted, and about four in ten allow raw data (44%) or instructions (37%) to be submitted.
- Over half (53%) have a mixture of open and available research artifacts and available upon request research artifacts. Three in ten (31%) have research artifacts available only upon request, and nearly two in ten (16%) have open and transparent research artifacts.
- Two in ten (22%) have a formal infrastructure (data or software repository) for accepting and processing artifacts.
- Almost four in ten review artifacts, either as part of the decision-making process for the submissions (24%) or independent of the decision-making process (14%).
- Just under one quarter (23%) assign citable permanent identifiers to artifacts
- Most do not assign badges to artifact submissions (72%), a little over one in ten (13%) use IEEE badges, and less use ACM badges (6%).

About one in ten Conferences Organizers and Editors in Chiefs of Journals or Magazines report they have reproducibility practices in place (11% and 10% respectively), or are planning to institute policies in the future (9% and 11% respectively). About three in ten Conferences Organizers and Editors in Chiefs of Journals or Magazines have no reproducibility practices (29% and 30% respectively). *Please see table 1 for more details.*

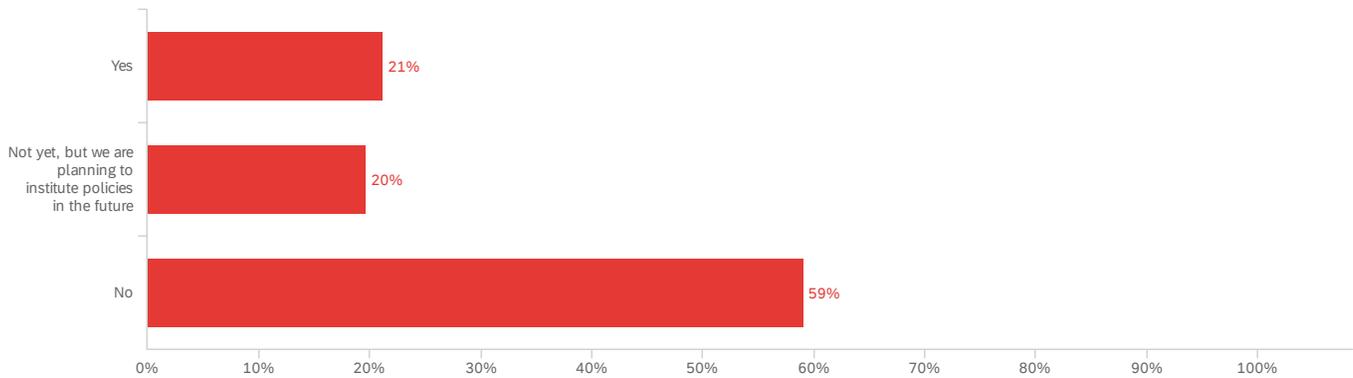
Table 1: Reproducibility Practices by Respondent Type		
	Conference Organizers	Editors in Chiefs
Yes	11%	10%
Not yet, but we are planning to institute policies in the future	9%	11%
No	29%	30%

Frequency Report

IEEE Reproducibility Practices Survey

November 16, 2020 9:04 AM MST

Q1 - Does your journal or conference have policies in place to support the computational reproducibility of published results?



#	Field	Percentage
1	Yes	21%
2	Not yet, but we are planning to institute policies in the future	20%
3	No	59%
		132

Showing rows 1 - 4 of 4

Q2 - Please describe these policies in detail (include a URL if relevant):

Please describe these policies in detail (include a URL if relevant):

A new feature has been incorporated into IEEE IC magazine submittal process asking if authors have data associated with their article. Each author will also have the option to link to IEEE DataPort in the submittal system to upload their dataset, receive a DOI, and then input the DOI into the article submittal system. We are planning to establish partnership with Code Ocean, a cloud-based computational reproducibility platform, to pilot the post-publication peer review of code associated with articles published in IEEE IC.

These policies have not been drafted yet

pls see here: <https://www.ieee-ras.org/publications/ram/information-for-authors-ram#reproducible> pls also read F. Bonsignorio, "A New Kind of Article for Reproducible Research in Intelligent Robotics [From the Field]," in IEEE Robotics & Automation Magazine, vol. 24, no. 3, pp. 178-182, Sept. 2017, doi: 10.1109/MRA.2017.2722918.

I am involved in the FPGA conference. We have an artifact evaluation phase and award ACM badges: <https://isfpga.org/artifact-evaluation/>

Allow github link as supplementary material

Details about the TPDS reproducibility initiative are available at <https://www.computer.org/csdl/journal/td/write-for-us/104303?title=Reproducibility%20Initiative&periodical=IEEE%20Transactions%20on%20Parallel%20and%20Distributed%20Systems>

We plan to include reproducibility as a significant factor in the reviewing process, asking reviewers to specifically comment on any actions taken by the authors to support reproducibility (such as access to the code, the datasets used in the experimental evaluation, as well as a detailed presentation of the experimental setup and parameterization of their proposed methods that will make it easy for readers to ensure they use the same configuration when conducting the experiments).

<https://icsme2020.github.io/cfp/ArtifactROSETrackCFP.html>

Giving access to data and algorithms. Pure data base papers are normally not accepted if the data base is not publically available.

The conference offers an artifacts track that allows authors of an accepted contribution to the RE conference to submit open science artifacts related to their contribution. Upon review, these will be awarded an open science badge. More details: <https://re20.org/index.php/artifacts/>

We encourage submission of code capsules via CodeOean. We also accept references to other code/data repositories such as Github, etc. However, we don't yet have well defined policies on how these must be documented.

See Open Science policy: <https://icsme2020.github.io/cfp/ResearchTrackCFP.html> and our ROSE festival: <https://icsme2020.github.io/cfp/ArtifactROSETrackCFP.html>

Code Ocean and IEEE DataPort™ are now available for authors of the IEEE T. on Automatic Control.

One of the selection criteria is "reproducability" e.g. see <https://conf.researchr.org/track/icse-2020/icse-2020-papers?track=ICSE%20Technical%20Papers#Call-for-Papers> "verifiability" criteria

TSG encourages authors to submit data and code during submission via IEEE Data Port. It's optional.

For an IEEE conference, we strictly follow IEEE paper requirement. Every author needs to sign the copyright form.

We are in process of initial considerations

Please describe these policies in detail (include a URL if relevant):

URL: <http://2019.rtas.org/artifact-evaluation/> Artifact Evaluation (AE) for RTAS is an optional evaluation process for research works that have been accepted for publication at RTAS. The AE process seeks to further the goal of reproducible science. It offers authors the opportunity to highlight the reproducibility of their results, and to obtain a validation given by the community for the experiments and data reported in their paper. In the AE process, peer practitioners from the community will follow the instructions included in the artifacts and give feedback to the authors, while keeping papers and artifacts confidential and under the control of the authors.

published in Xplore

We are linked to dataport and codeocean, to encourage authors to submit code and data.

<https://conf.ewdtest.com> The paper containing new and unpublished results can be accepted to EWDTs 2020. The paper has to meet the IEEE requirements, include scientific novelty and practical value, experimental results.

We have the plan (not implemented yet) to recommend availability of simulation code and datasets.

During the review phase the works that include studies that may need to be reproduced to verify the results are evaluated for reproducibility and availability of replication packages.

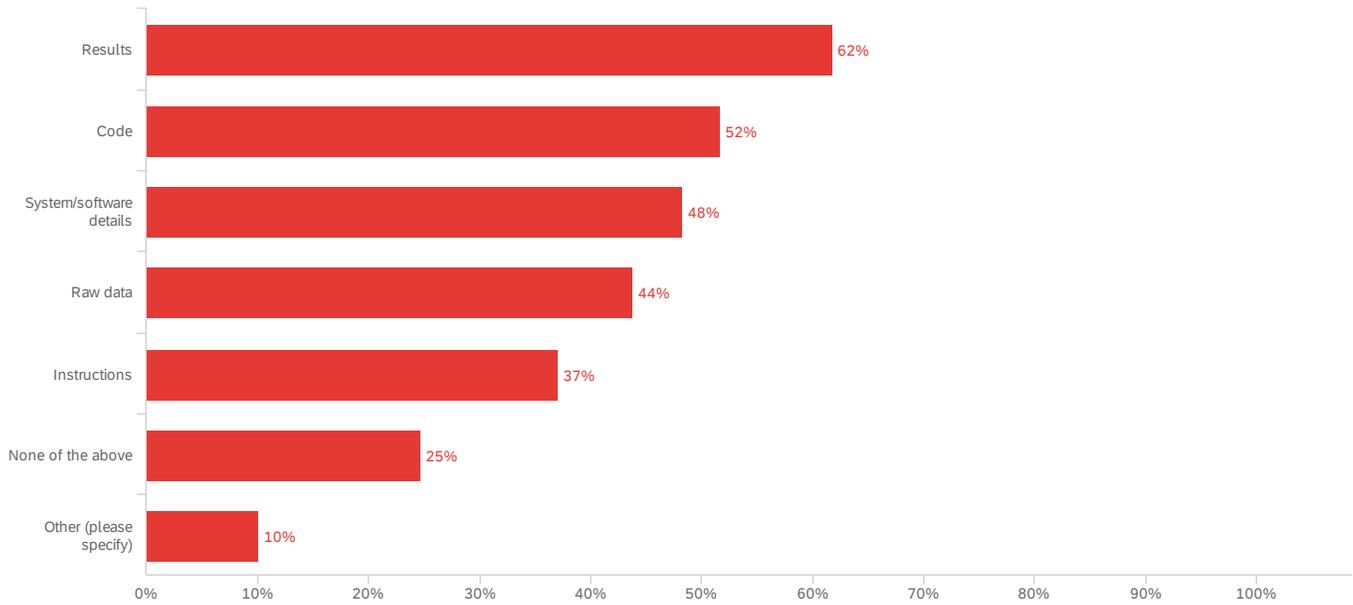
<https://codeocean.com/signup/ieee> <https://ieee-dataport.org/about-ieee-dataport>

We have a replicability stamp. <http://www.replicabilitystamp.org/requirements.html> Authors can apply and if they get it, it is noted next to their paper. They also get advanced in the publication queue.

We introduced a requirement that the dataset that the main results are shown on should be generally available to the research community, or that the authors state clearly and explain why if it is not. This was slightly controversial with some.

We did not yet enforce any policy on a wider level because despite increasing the quality, that would put the conference at a disadvantage for quantity of submitted papers. Personally I think that badges and other form of recognition might help with the introduction. For the UCC 2018 demos ("cloud challenge") we did specifically ask for reproducibility (<https://events.cbmi.htw-berlin.de/ucc18-cloudChallenge/>), and received good but few submissions. In 2019 we attempted the same, but alas, did not receive submissions, perhaps because the bar was too high. This year, due to the pandemic, no challenge takes place, and we could not think of making reproducibility a hard requirement for the main track.

Q3 - Which, if any, of the following research artifacts do you allow to be submitted to support the reproducibility of published results? (Please select all that apply.)



#	Field	Percentage
5	Results	62%
4	Code	52%
3	System/software details	48%
1	Raw data	44%
2	Instructions	37%
7	None of the above	25%
6	Other (please specify)	10%
		89

Showing rows 1 - 8 of 8

Q3_6_TEXT - Other (please specify)

Other (please specify)

Not really decided yet

It is done from percom2020

Other (please specify)

Experimental settings must be clearly given.

Authors can include links to the above.

Any could. Rarely are they. The norm is code on github and dataset somewhere.

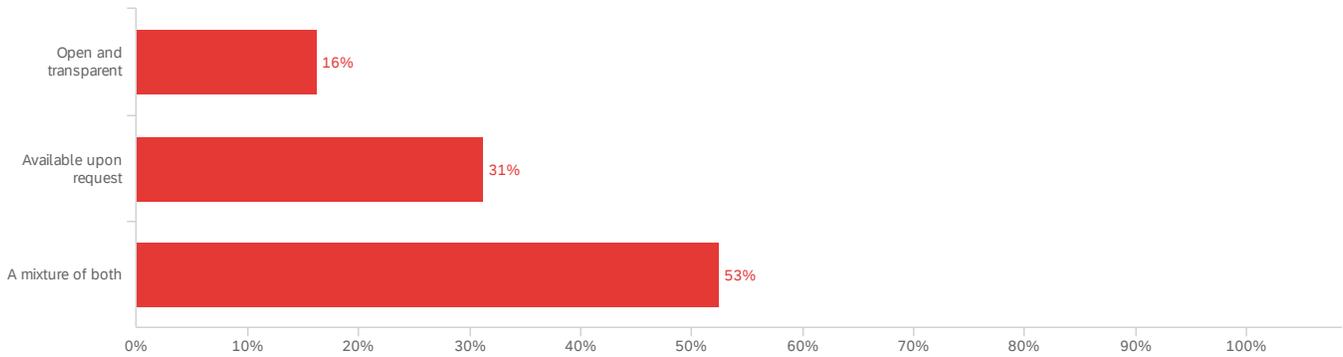
All of the above can be linked from papers but not submitted directly to the conference.

do not know

Technical reports

accurate evaluation metrics

Q4 - How would you describe the availability of most reproducible research artifacts in your conference or journal?



#	Field	Percentage
1	Open and transparent	16%
2	Available upon request	31%
3	A mixture of both	53%
		80

Showing rows 1 - 4 of 4

Q5 - Please describe in detail your conference or journal's process for accepting and processing artifacts.

Please describe in detail your conference or journal's process for acceptin...

just like any other magazine

IEEE Potentials seldom publishes original research that we consider more suitable for archival research journals and conferences. When we receive such articles, they undergo "administrative reject" with the authors being informed and encouraged to submit to archival journals and conferences. In some cases, we do publish project descriptions but we don't have a mechanism to either collect artifacts or evaluate them. Generally, we publish projects that have been demonstrated somewhere else. However, only a few such articles are accepted in a year.

Each author has the option to link to IEEE DataPort in the submittal system to upload their dataset, receive a DOI, and then input the DOI into the article submittal system.

All submissions are through ScholarOne. After admin and similarity check it will be forwarded to an AE. The AE will assign three reviewers. AE will receive the reviews and then recommend his/her decision to EIC.

We do not have formal processes yet.

N/A

We currently do not really support this, nor did we have requests yet. This might also be due to the fact that we're a magazine.

codeocean. or dataport,see our guidelines

We don't have in MCE now.

Results are mostly presented in terms of mathematical results (theorems and checkable proofs). Simulations and data are mostly presented to illustrate the mathematical results.

The IMM Magazine has the aim of providing contributions for the general audience interested in the IM framework. No deep technical contents are usually published in the Magazine. The only "artifacts" are results published within the columns.

Artifacts are evaluated by a reviewer. This process is not double blind.

All the articles submitted to the Journal are subjected to a peer review process.

to my knowledge there is no defined process. authors are encouraged to published data that is required to reproduce their experiments.

as supplemental material

The conference allows authors to submit papers for publication which can reference artifacts.

Please describe in detail your conference or journal's process for acceptin...

As part of the TPDS reproducibility pilot, authors who have published in TPDS can make their published article more reproducible and earn a reproducibility badge by submitting their associated code for post-publication peer review. As part of this pilot, the process begins when an author who has published in TPDS notifies the editor-in-chief (EiC) that she or he wishes to submit code for post-publication peer review. The EiC directs the author to upload the code to Code Ocean, which generates a "compute capsule"—the code, data, results, and computational environment specifications. Code Ocean sends the EiC a review copy of the compute capsule, which is then passed on to the assigned Reproducibility Associate Editor for the article. TPDS has created a Reproducibility Editorial Board currently consisting of five Reproducibility Associate Editors to handle the peer review process for submitted code. The Reproducibility Associate Editor invites reviewers to review the code; the process is similar to article peer review, except it is conducted via email outside of our traditional online submission system. Once a reviewer accepts, he or she receives the review link to the compute capsule and a simple online form in which to complete the review. The reviewer is asked, among other things, whether he or she recommends a reproducibility badge for the associated article. Two badges are available: 1. Code Available: The code, including any associated data and documentation, provided by the authors is reasonable and complete and can potentially be used to support reproducibility of the published results. 2. Code Reviewed: The code, including any associated data and documentation, provided by the authors is reasonable and complete, runs to produce the outputs described, and can support reproducibility of the published results. Once the reviewer submits the report, the Reproducibility Associate Editor can make a decision and inform IEEE of which badge, if any, should be applied to the article in IEEE Xplore.

These can be provided as urls in the manuscript where readers can download the corresponding artifacts.

Papers are asked to have replication package and the PC values it positively. There is a Joint Artifact Evaluation Track and ROSE Festival track

1. The authors of an accepted contribution submit their open science materials through a shared GitHub repository. The authors specify which badges they apply for: reusable, available, replicated, reproduced. 2. The artifact is reviewed, through an open review process, by 2 reviewers from the artifacts committee, who assess the artifact against the criteria for awarding those badges (criteria here: <https://re20.org/index.php/artifacts/>). The reviewers act as shepherds: this is why the process is open. 3. If the authors make the appropriate changes to their artifacts, e.g., improve the documentation, they are awarded badges. 4. The badges are digitally printed on the accepted paper

CodeOcean artifacts or any other files/URLs submitted would be made available to reviewers for checking, along with the manuscript. CodeOcean integration would ensure that the code capsule is then linked from IEEE Xplore when the paper is published. For other artifacts, the manuscript would have to provide the necessary URLs or references, as we do not have a standardized way to publish those yet. Hence CodeOcean is the option we most recommend to authors who wish to make their code/data available.

See <https://icsme2020.github.io/cfp/ArtifactROSETrackCFP.html>

We do not have a process in place, but provide the possibility to connect data to publications via Code Ocean and IEEE DataPort.

review by TPC

These are predominantly self-archiving and provide link in paper However increasingly an artefacts track judges the availability, quality, reusability etc of the artefacts above. e.g. see <https://2020.icse-conferences.org/track/icse-2020-Artifact-Evaluation#Call-for-Submissions>

Can't answer because I don't know what you mean by artifacts.

Provided during submission and review process

no guideline currently

N/A

Again, this information is not usually volunteered by the authors

n/a

We do not accept or process any artifacts

Please describe in detail your conference or journal's process for acceptin...

Results in our papers typically are experimental, not easy to reproduce. Simulation papers should in my opinion be published together with full info on source data etc., the only problem is that in my field simulation packages often are proprietary (i.e. not openly available).

We do not yet have a formal procedure or process. Artifacts are generally available upon request from the paper author.

There is currently no explicit process in place. It is left up to the authors.

easychair tracks with professional license

The main measure is the review process in which reviewers typically ask the authors to provide all details regarding the method, experimental settings and used data.

We don't have a clear process and so far have not seen a strong need.

The artifact evaluation criteria are similar to those previously used by other conferences in their repeatability and AE processes. Submissions will be judged based on three criteria — coverage, instructions, and quality, as defined below — where each criterion is assessed on the following scale: significantly exceeds expectations (5), exceeds expectations (4), meets expectations (3), falls below expectations (2), missing or significantly falls below expectations (1). In order to be judged "repeatable" an artifact must generally "meet expectations" (average score of 3 or more), and must not have any missing elements (no scores of 1). Each artifact is evaluated independently according to the listed objective criteria. The higher scores ("exceeds" or "significantly exceeds expectations") in the criteria will be considered aspirational goals, not requirements for acceptance.

double blind peer review - final decision by committee

Not specific requests so far. But several direct interactions occur among authors and interested readers once the paper is published.

We provide Data Port for authors.

The authors can upload raw data file through IEEE DataPort (before, during or after the publication process). The DOI assigned in DataPort is included in the main manuscript file (to link the paper with the data).

We do not review code and data; they are added as supplemental material to the paper (which is reviewed as normal).

My journal is jointly managed by IEEE and OSA. OSA has a tool called figshare, which authors can use to upload code, results, graphs, etc.

COMST publishes surveys and tutorials. Surveys classify and compare related work in an area or sub-areas, while tutorials introduce emerging technologies or standards. Thus, unlike a single piece of original research, there is no need to provide data or program for readers to reproduce numerical results.

We have currently no systemised way of doing this in place

There are no specific policies. Authors can include links to GitHub or other places for code in the paper.

The papers submitted to the symposium are peer double reviewed involving experts in the field of the paper.

See the following site. <http://prdc.dependability.org/PRDC2019/cfp.html?id=paper>

Based on the peer reviews.

This is Mascots. We don't have a policy.

Please describe in detail your conference or journal's process for acceptin...

Apart from the authors that choose Code Ocean at the time of the paper acceptance, for special categories of papers we propose authors to submit Supplementary material that may include simulations, codes, software details. This part is not evaluated to decide about the paper acceptance but is reviewed.

We have nothing in place.

Artifacts can be published and presented in separate tracks in the conference. They need to be made public by the authors.

Authors are encouraged to complement their manuscripts with code and experimental results by using dataPort and Code Ocean. That occurs as part of the manuscript submission process.

Each accepted authors gets an email with instructions on how to apply. Then the volunteer group at <http://www.replicabilitystamp.org/> steps in.

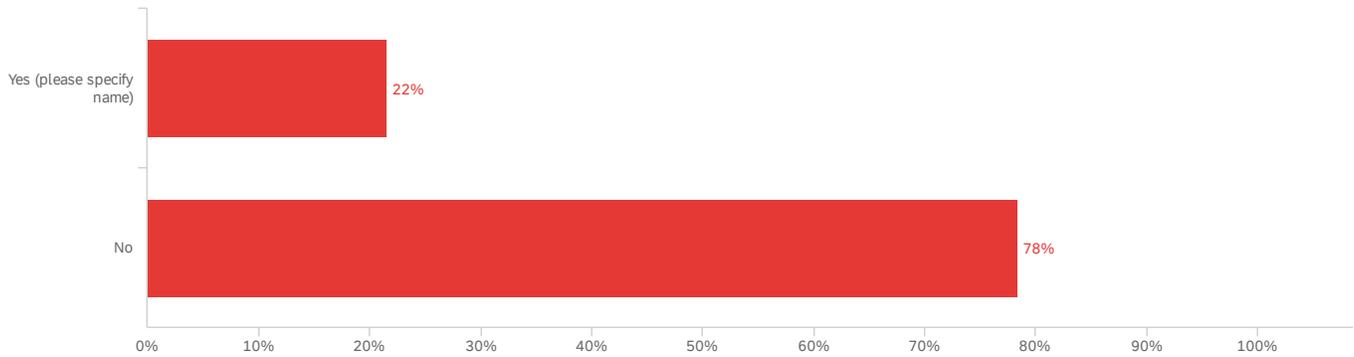
We do not yet have a well defined process. We ask the AE to consider this in making a recommendation.

The cloud community is very pragmatic and more systems-centric than data-centric. Although we see an increasing demand from reviewers to link to code (at least something published on e.g. Github, not necessarily in long-term/FAIR archives). This might increase due to the availability of portable code (e.g. Docker containers), although especially in cloud research, some artefacts might require complex hardware setups. Right now, however, only papers are formally submitted and reviewed, and it is up to reviewers to expect more.

They are part of the regular review process and checked by the reviewers and editor.

No idea, this is not a common practice.

Q6 - Do you have a formal infrastructure (data or software repository) for accepting and processing artifacts?



#	Field	Percentage
1	Yes (please specify name)	22%
2	No	78%

88

Showing rows 1 - 3 of 3

Q6_1_TEXT - Yes (please specify name)

Yes (please specify name)

ieee data port

ScholarOne

see guidelines

ScholarOne

CodeOcean and DataPort

Github

CodeOcean

Ask PerCom 2020 chairs for detail

IEEE Data Port

IEEE repositories (Dataport, Code Ocean)

Yes (please specify name)

Code Ocean

Easychair

IEEE DataPort

figshare

ScholarOne

ScholarOne collates the above two cited sources

yes, the graphics replicability group

Dataport

Q7 - What, if any, metadata is requested along with the artifacts?

What, if any, metadata is requested along with the artifacts?

N/A

None

N/A yet

n/a

We don't have in MCE now.

none

NA

Information of system and hardware required to run the artifact. Software details including version numbers of all tools used.

Code and Figures

n/a

N/A

Authors are required to provide metadata describing code/data as well as other necessary information at the time of submission using a provided template.

- a README.md main markdown file describing what the artifact does; - A STATUS.md markdown file stating what kind of badge you are applying for (one of reusable, available, replicated, reproduced) as well as the reasons why you think your artifact deserves that badge. - a LICENSE.md markdown file describing the distribution rights (note that the license needs to be some form of open source license). - an INSTALL.md markdown file with installation instructions. These instructions should include notes on what output to expect, which confirms the code is installed and working.

none

Varies - but see artefacts track CFP link above

Don't know.

Up to the authors

no

TBD

n/a

we do not have any specific request, also, papers submitting source files to simulation packages are today a tiny minority

What, if any, metadata is requested along with the artifacts?

N/A

The upload of the data/code is optional, and the uploaded materials are not peer-reviewed.

None

instructions intended for other practitioners that seek to recreate the paper's computationally generated results

===

none

N/A

N/A

None

The reviewer can request additional information about the results.

Nothing in particular.

NA

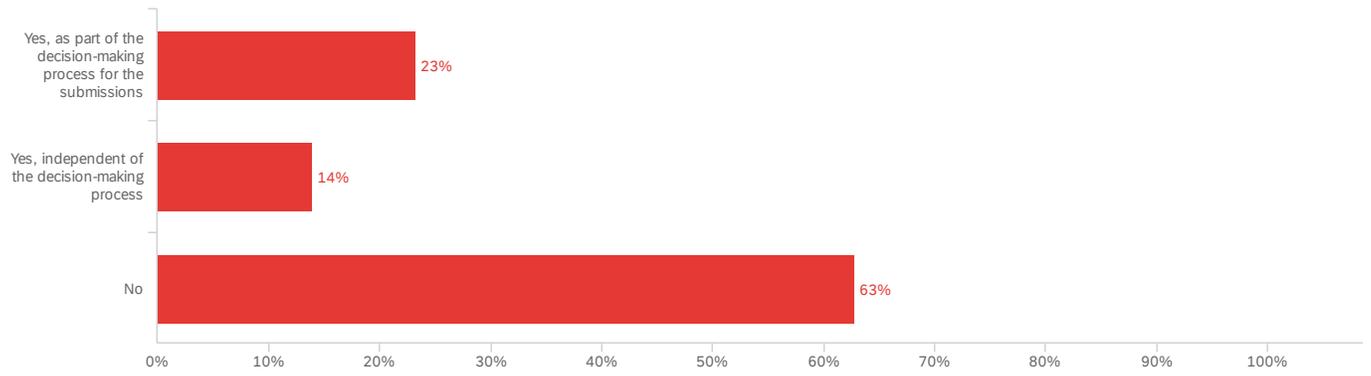
authors' information and all other routine ScholarOne's information

None.

A brief description and manual

Link to website where the code and data are accessible

Q8 - Are artifacts reviewed?

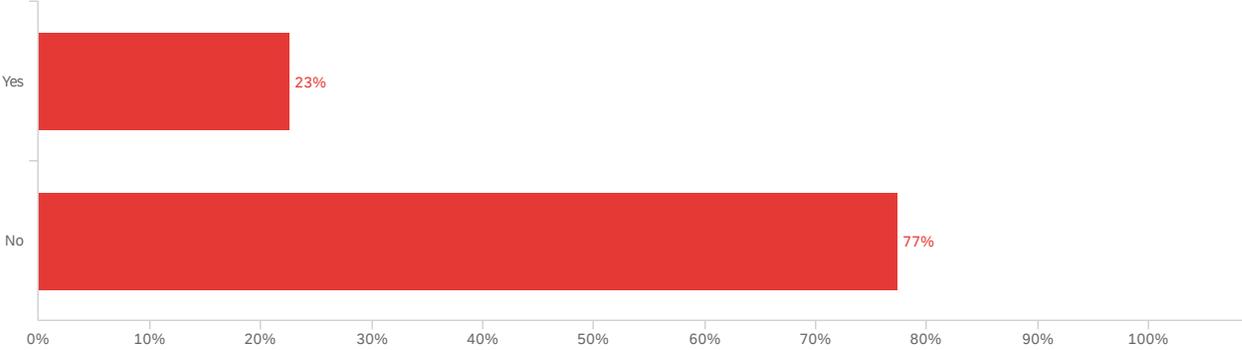


#	Field	Percentage
1	Yes, as part of the decision-making process for the submissions	23%
2	Yes, independent of the decision-making process	14%
3	No	63%
		86

Showing rows 1 - 4 of 4

Q9 - Are the artifacts assigned citable permanent identifiers (e.g., Digital Object

Identifiers (DOI))?



Q10 - Please describe in detail how the artifacts are linked to the submission:

Please describe in detail how the artifacts are linked to the submission:

standard ieee procedures of ieee dataport

Receive a DOI, and then input the DOI into the article submittal system.

N/A We are not yet in a state to answer many of the questions here above accurately

n/a

see guidelines

We don't have in MCE now.

NA

There is a separate form where authors describe their artifacts. Submission process is double blind. Review of artifacts is not.

The artifacts are linked through the ScholarOne.

either via urls / links in the publication or as appendix/additional material for the submission

Only by references included in the submitted papers.

The artifacts are linked to the online article in IEEE Xplore.

Papers are required to provide an artifact DOI or a link to the artifact on a publically accessible archival repository.

See above

Please ask PerCom 2020 chairs

See <https://2020.icse-conferences.org/track/icse-2020-Artifact-Evaluation#Call-for-Submissions>

Don't know.

Not sure

supplementary files

N/A

Within the text reference

n/a

Please describe in detail how the artifacts are linked to the submission:

should be having a link through IEEE Xplore

They are published on IEEE's site along with the paper as appendices.

Submission of the artifacts is optional. During the paper submission, authors have the option to upload data and source code.

NA

Authors of papers corresponding to artifacts that pass the evaluation will be entitled to include, in the camera-ready version of their paper, an RTAS AE seal that indicates that the artifact has passed the repeatability test. Authors are also entitled to, and indeed encouraged, to also use this RTAS AE seal on the title slide of the corresponding presentation at RTAS'19.

submissions via easychair and managed there

none

authors can upload the artifacts through the submission portal.

The authors can upload raw data file through IEEE DataPort (before, during or after the publication process). The DOI assigned in DataPort is included in the main manuscript file (to link the paper with the data).

Through DataPort and CodeOcean.

A hyperlink is included in the paper, which links to the entry in figshare.

N/A

Mainly through a link, if the authors want.

Artifacts can be submitted as additional files in the paper submission system.

Submissions adopted after rigorous peer review will be published as the artifacts.

If the supplementary material option is active, authors submit the paper together with the artifacts.

Via citations in the paper.

They are made available to the reviewers as part of the complete ScholarOne's collateral.

Artefacts are almost always just linked from papers.

They are referred to in the published paper.

Links to website

Q11 - Please describe in detail any policies put in place to maintain the artifacts over time:

Please describe in detail any policies put in place to maintain the artifac...

standard ieee procedures of ieee dataport

N/A

N/A

n/a

is in ieeexplore a link

We don't have in MCE now.

none

NA

We use the following policies: - Extra Chasing and - chasing

none so far

N/A

The TPDS pilot relies on CodeOcean (and DataPort) for long term maintenance of the artifacts. No explicit policies are currently defined.

None

I believe IEEE already has this addressed for CodeOcean. For other repositories like Github or data repositories, we evaluate on a case-by-case basis if the artifacts are likely to remain public. For example, with Github, we expect so, but there are no formal policies/agreements in place to ensure it.

These are held in Code Ocean and IEEE DataPort.

None as yet

Don't know.

Not sure

no

The authors will keep the artifacts

Please describe in detail any policies put in place to maintain the artifa...

TBD

n/a

none for the moment.

Unclear how the uploaded artifacts are maintained.

NA

steering committee

none

no specific policy. IEEE publication team maintain the artifacts.

No specific

Not aware of what OSA does.

N/A

It will be properly managed by IEEE Explore.

We link them to the paper in Xplore.

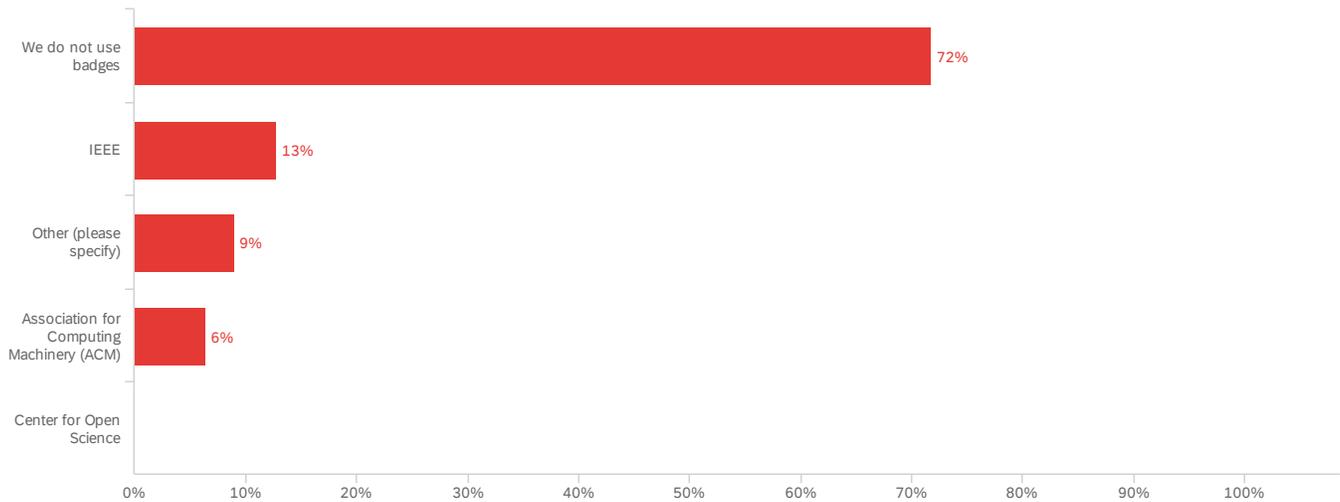
As part of the publication process, links to the above mentioned repository are provided. With that being said, we haven't had yet a case in which the authors have provided such artifacts.

None.

None, we currently count on the authors' efforts to maintain the artifacts over time.

Nothing is done on this point.

Q12 - Are any badges assigned to the submission?



#	Field	Percentage
1	Association for Computing Machinery (ACM)	6%
2	IEEE	13%
3	Center for Open Science	0%
4	Other (please specify)	9%
6	We do not use badges	72%
		78

Showing rows 1 - 6 of 6

Q12_4_TEXT - Other (please specify)

Other (please specify)

None

we place in print R articles logo

NA

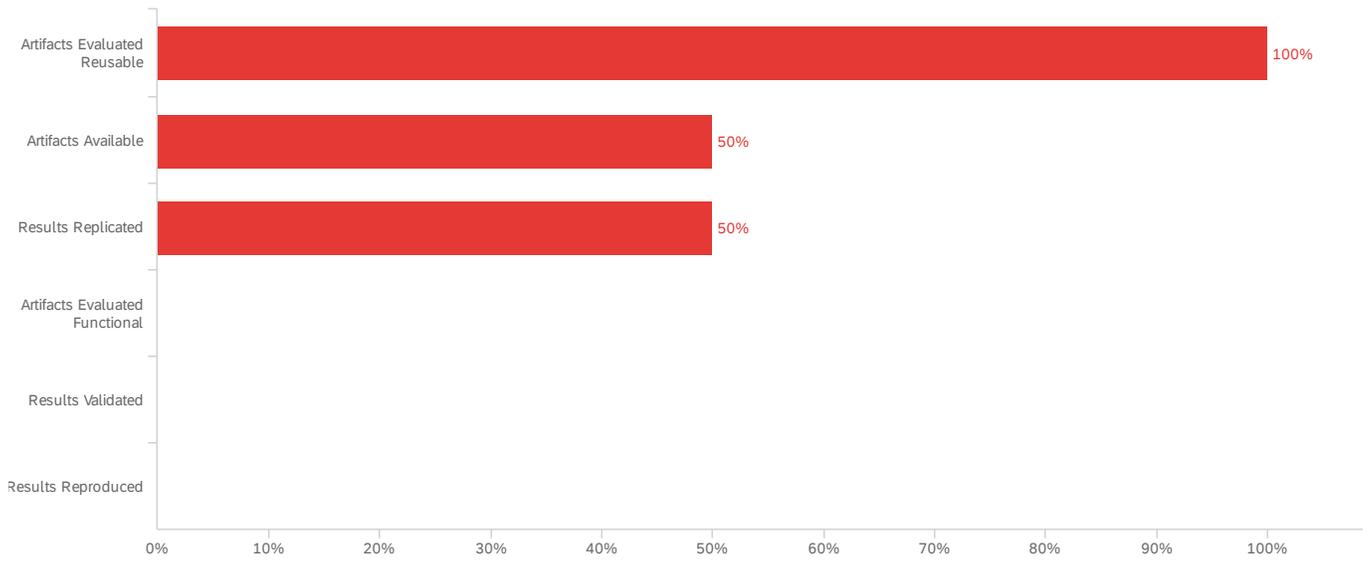
Loose adaptation of ACM badges

Ask PerCom 2020 chairs

TBD

Conference-specific

Q13 - Which ACM reproducibility badges have you awarded in the past year?

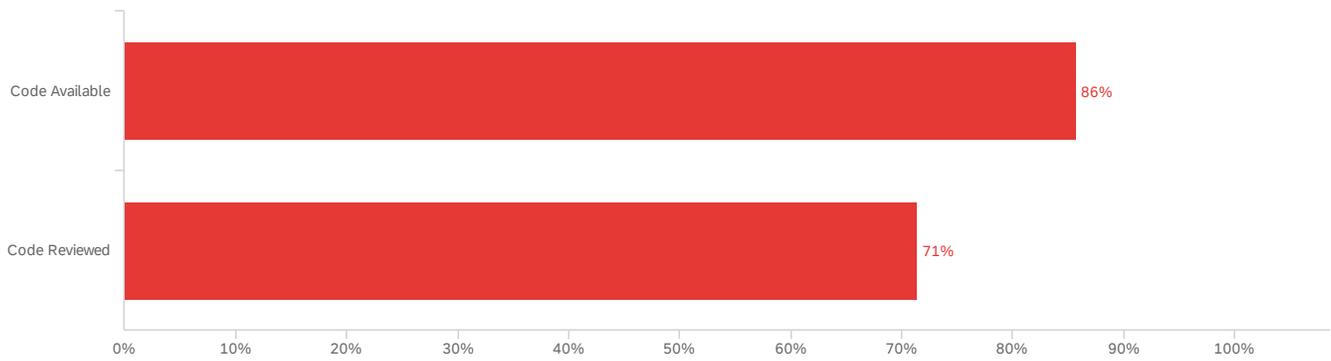


#	Field	Percentage
2	Artifacts Evaluated Reusable	50%
3	Artifacts Available	25%
5	Results Replicated	25%
1	Artifacts Evaluated Functional	0%
4	Results Validated	0%
6	Results Reproduced	0%

4

Showing rows 1 - 7 of 7

Q14 - Which IEEE reproducibility badges have you awarded in the past year?

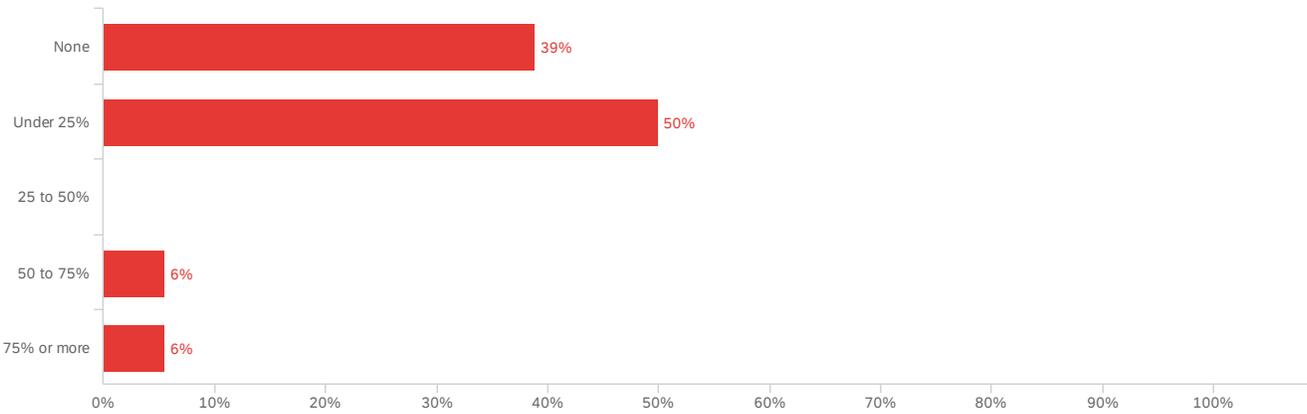


#	Field	Percentage
1	Code Available	55%
2	Code Reviewed	45%

11

Showing rows 1 - 3 of 3

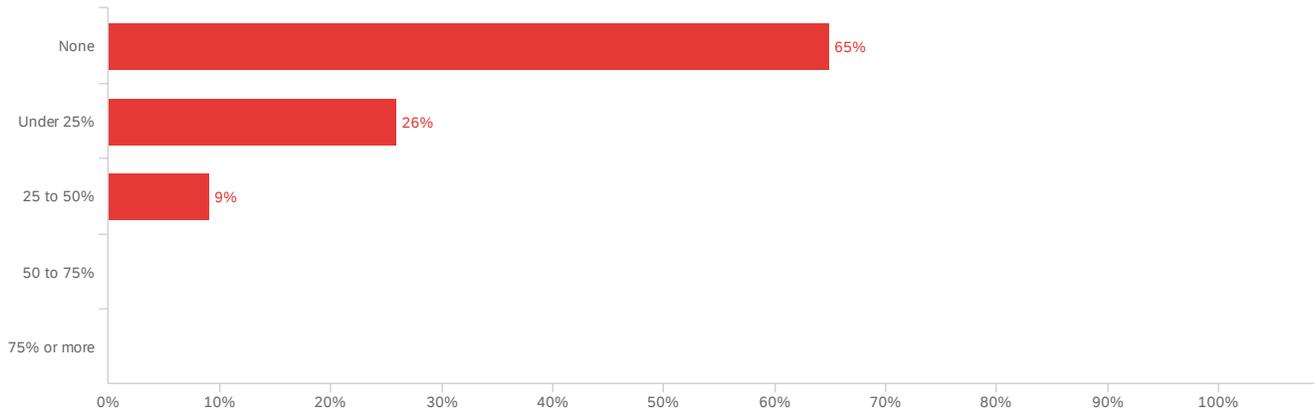
Q16 - Out of all your reproducible research articles in the past year, what percent range have received a badge?



#	Field	Percentage
1	None	39%
2	Under 25%	50%
3	25 to 50%	0%
4	50 to 75%	6%
5	75% or more	6%
		18

Showing rows 1 - 6 of 6

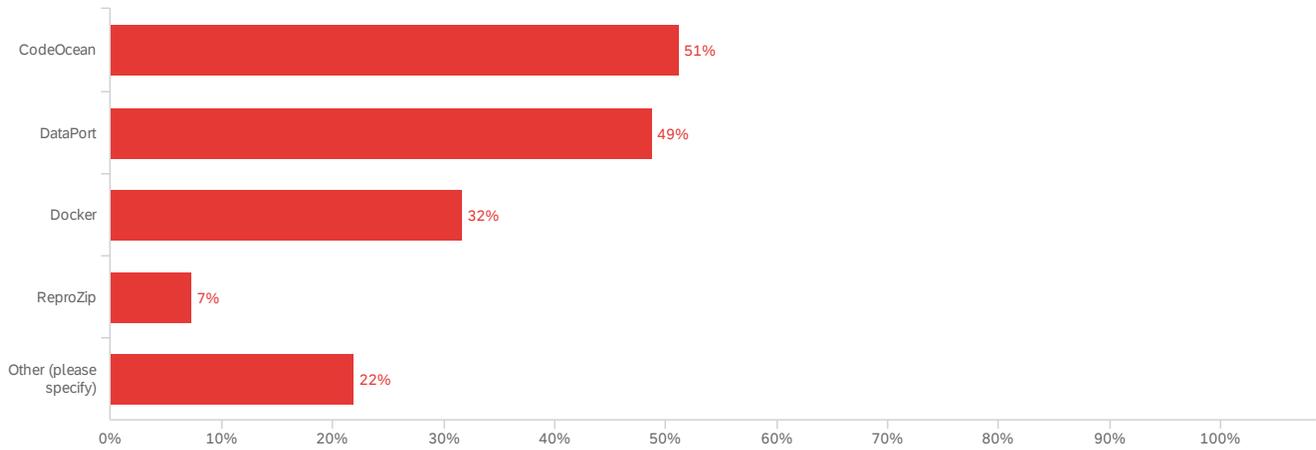
Q17 - Out of all your authors who published or presented reproducible research, what percent have asked for reproducibility guidance (e.g., policy questions, advice on tools, artifact/data submission)?



#	Field	Percentage
1	None	65%
2	Under 25%	26%
3	25 to 50%	9%
4	50 to 75%	0%
5	75% or more	0%
		77

Showing rows 1 - 6 of 6

Q18 - Which, if any, of the following tools to help enable participation in computational reproducibility? (Please select all that apply.)



#	Field	Percentage
1	CodeOcean	32%
2	DataPort	30%
3	Docker	20%
4	ReproZip	5%
5	Other (please specify)	14%
		66

Showing rows 1 - 6 of 6

Q18_5_TEXT - Other (please specify)

Other (please specify)

None

NA

See reply above - do not know

virtualBox

figshare

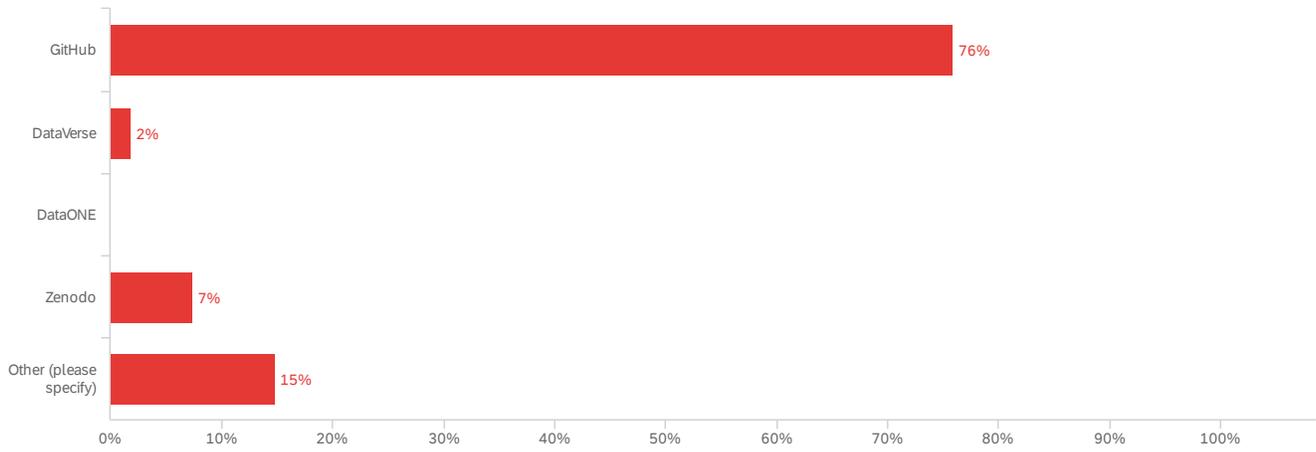
It is necessary to analyze and compare another services

Other (please specify)

none

source codes

Q19 - Which, if any, of the following repositories do you recommend for computational reproducibility?



#	Field	Percentage
1	GitHub	76%
2	DataVerse	2%
3	DataONE	0%
4	Zenodo	7%
5	Other (please specify)	15%
		54

Showing rows 1 - 6 of 6

Q19_5_TEXT - Other (please specify)

Other (please specify)

codeocean

NA

Not sure

See reply above - do not know

no comment

personal website

Other (please specify)

Personal choice: Renku (from the Swiss Data Science Center)

Q20 - Do you encourage the use of any specific open license(s) for the artifacts?

Do you encourage the use of any specific open license(s) for the artifacts?

no

Our publication policy, as of now, is not focused on research articles and related artifacts.

No

Yes

N/A yet

this and next year we offer free open access for 5 papers a year. for R articles.

We don't have in MCE now.

no

NA

Any open license is fine.

No

Unknown

No.

We leave the choice to the authors.

No

no

No

No

No

no idea

Yes

n/a

Do you encourage the use of any specific open license(s) for the artifacts?

No

N/A

No

none

no comment

No

Not yet, but we might do in the future

Sure

Yes, the open license services are preferable.

Yes

NO

Do not know.

Our journal is 100% open access, which means that all content is freely available without charge to users or their institutions. All articles accepted after 12 June 2019 are published under a CC BY 4.0 license

No.

No

Yes

Q21 - Are there any barriers you observe or hear about from authors who are trying to conform to reproducibility policies?

Are there any barriers you observe or hear about from authors who are trying...

no

No

No

Many Ph. D students want to hold on to their artifacts till they graduate. Because multiple papers may be coming from the same tools they built. Do not want to release tools after the first paper. Many tools need a lot of work. Students/researchers want to get multiple papers from the same tool.

is still in earning phase, authors and reviewers need to get. more used to this type. of papers. F. Bonsignori is placing a lot of effort in this with workshops etc

We don't have in MCE now.

no

NA

No

Unknown

The CodeOcean platform is not always appropriate for the research published in TPDS.

Usually barriers involve people from industry who are using proprietary datasets to conduct their experimental evaluation and are not allowed to provide such data, as well as to provide any code/implementation of their methods.

The lack of a standard terminology. For example, authors who have experience with ACM badges were slightly confused by our adaptation which, by the way, was based on the NISO recommended practice on reproducibility badging <https://niso.org/niso-io/2020/05/announcing-nisos-draft-recommended-practice-reproducibility-badging-and-definitions>

Not so far

no

No

No

No experience with this

No

Are there any barriers you observe or hear about from authors who are trying...

No

n/a

No

It is important and doable in most cases to conform to reproducibility policies.

None identified to date.

- Results cannot be provided due to NDA - The artifact would require access to specialized hardware

none

none

Many authors feel that submitting code will damage chances of getting paper accepted (as it is purely optional), so don't submit code!

Can't upload PDF files to figshare.

There might be technical or legal issues, but as we don't do this yet, we haven't heard much

Have not asked

I did not hear about the barriers.

I don't think so.

Admittedly most of the submissions to my journal are of theoretical nature, and few feel the need to submit the code supporting their simulations.

I have not explored this extensively.

not that I know of

Human subjects permission may restrict distribution of data. So many government or corporate sponsors. Including US government.

As there are no policies - no. But once policies would mandate reproducibility, we would lose some submitters and others may struggle. In that case, a shepherding concept (experienced community members assist authors of accepted papers) might make sense. ACM SOCC is known for shepherding of non-rejected papers.

No

Yes, publishing codes before acceptance of a journal/conference paper can be not wanted by some authors and institution since the codes can be used by other researcher without any citation in case the paper is rejected.

Q26 - If you have any additional comments regarding the role of journals and conferences in encouraging computational reproducibility, please indicate them here:

If you have any additional comments regarding the role of journals and conf...

as we are a magazine, we are not pioneering anything here. We are happy to promote dataport and codeocean.

indeed important that journals support this and encourage (with free. open access, maybe later even dedicated awards) to support and encourage this

We don't have in MCE now.

This is a periodical that discusses technical topics at a high level so that they can be understood by a broad readership that includes non-engineers. For example, no questions are allowed in our articles. As such, we are not a technical journal reporting on the details of research as the IEEE transactions do. This survey about reproducibility of results presents questions that do not apply or are inappropriate for a valid response given the response options presented; therefore, I am unable to complete the survey.

NA

No

I believe journals and conferences can play a role in encouraging computational reproducibility.

Code and data needs to be integrated more closely into digital libraries

Reproducibility is very important and in NCA we plan to make it a decisive factor starting from next year.

We need a common standard for badges. Furthermore, we need policies to better link the artifact with a DOI with subsequent updates of that artifact, that typically take place on a separate repository by the authors of the paper.

What is computational reproducibility?

N/A

This is an important area that I will be suggesting to be further considered by our guidance committee. At this time we do not have specific policies in place to support, encourage, or require efforts to support reproducibility of result.

In general, I support taking measures (submission of code and instructions to use the code, data used (or a link to the public data) to make sure that the results reported in the accepted papers are reproducible. Exceptions could be considered if the presented research is funded by industry.

code availability would be interesting for experiments reproducibility.

none

I strongly endorse encouraging computational reproducibility. We are working with conferences to try to establish best paper awards, etc, for "Best Readily Reproducible Paper" (or similar) in addition to normal best paper awards.

Sounds interesting, keep us in the loop!

If you have any additional comments regarding the role of journals and conf...

It is good to emphasize reproducibility aspects. Also, appropriate IP protection needs to be provided to ensure higher participation (e.g., code/algorithm -- say, if the paper is declined).

We have to collaborate with companies providing digitalization in the scientific research and use these services.

NO

I feel reproducibility is a good goal for computer science research.

It depends a lot on the nature of the work. If a paper conducts an in-depth interview survey with a few participants, then what constitutes reproducibility might be hard to answer. If a paper does performance measurements, it will be a lot easier. In my team, we work on the Microservice Artefact Observatory to build trusted ground truth about software artefacts, curated by independent researchers. It is still in the early stages, but aims to preserve historic records of how software behaved or was structured at certain times. We see this as complementary to reproducibility, but likewise a necessary component to increase the quality of studies on software artefacts.

In some cases (e.g. electronic circuit design), reproducibility is very difficult since some expensive license for specific tools can be required. Then reviewers may not have access to such tools.

End of Report

Reproducibility Practices at IEEE CS Journals and Conferences Survey

Start of Block: Default Question Block

intro In order to better understand Reproducibility Practices at IEEE Journals and Conferences, IEEE would like you to answer some questions regarding your current practices. Most of the questions will ask for specific responses or choices. You will also have several opportunities to express your opinions in your own words. Your response to this survey is very important. All responses will be anonymous and will only be reported on at the aggregate level. For questions related to the survey, please contact: Josephine Russo, MSW
Manager, IEEE Strategic Research
445 Hoes Lane
Piscataway, NJ 08854, USA
russo.j@ieee.org

Display This Question:

If List = Conference organizers

pos descp We value your input because of you volunteer work in the following position: Organizer of [\\${e://Field/Conference%20Title}](#). If you have been the organizer of multiple conferences, please answer for the one that is the most relevant to this survey.

Display This Question:

If List = EIC

pos descp We value your input because of you volunteer work in the following position: Editor in Chief of [\\${e://Field/Journal%20Title}](#). If you are the EIC of multiple IEEE journals, please answer for the one that is the most relevant to this survey.

Q1 Does your journal or conference have policies in place to support the computational reproducibility of published results?

- Yes (1)
- Not yet, but we are planning to institute policies in the future (2)
- No (3)

Display This Question:

If Does your journal or conference have policies in place to support the computational reproducibili... = Yes

Or Does your journal or conference have policies in place to support the computational reproducibili... = Not yet, but we are planning to institute policies in the future

Q2 Please describe these policies in detail (include a URL if relevant):

Q3 Which, if any, of the following research artifacts do you allow to be submitted to support the reproducibility of published results? (Please select all that apply.)

- Raw data (1)
 - Instructions (2)
 - System/software details (3)
 - Code (4)
 - Results (5)
 - Other (please specify) (6)
-

None of the above (7)

Q4 How would you describe the availability of most reproducible research artifacts in your conference or journal?

- Open and transparent (1)
 - Available upon request (2)
 - A mixture of both (3)
-

Q5 Please describe in detail your conference or journal's process for accepting and processing artifacts.

Q6 Do you have a formal infrastructure (data or software repository) for accepting and processing artifacts?

Yes (please specify name) (1)

No (2)

Q7 What, if any, metadata is requested along with the artifacts?

Q8 Are artifacts reviewed?

Yes, as part of the decision-making process for the submissions (1)

Yes, independent of the decision-making process (2)

No (3)

Q9 Are the artifacts assigned citable permanent identifiers (e.g., Digital Object Identifiers (DOI))?

Yes (1)

No (2)

Q10 Please describe in detail how the artifacts are linked to the submission:

Q11 Please describe in detail any policies put in place to maintain the artifacts over time:

Q12 Are any badges assigned to the submission?

- Association for Computing Machinery (ACM) (1)
 - IEEE (2)
 - Center for Open Science (3)
 - Other (please specify) (4)
-
- We do not use badges (6)

Display This Question:

If Are any badges assigned to the submission? = Association for Computing Machinery (ACM)

Q13 Which ACM reproducibility badges have you awarded in the past year?

- Artifacts Evaluated Functional (1)
- Artifacts Evaluated Reusable (2)
- Artifacts Available (3)
- Results Validated (4)
- Results Replicated (5)
- Results Reproduced (6)

Display This Question:

If Are any badges assigned to the submission? = IEEE

Q14 Which IEEE reproducibility badges have you awarded in the past year?

Code Available (1)

Code Reviewed (2)

Display This Question:

If Are any badges assigned to the submission? = Center for Open Science

Q15 Which Center for Open Science reproducibility badges have you awarded in the past year?

Preregistered (1)

Open Data (2)

Open Materials (3)

Display This Question:

If Are any badges assigned to the submission? = Association for Computing Machinery (ACM)

Or Are any badges assigned to the submission? = Center for Open Science

Or Are any badges assigned to the submission? = IEEE

Or Are any badges assigned to the submission? = Other (please specify)

Q16 Out of all your reproducible research articles in the past year, what percent range have received a badge?

None (1)

Under 25% (2)

25 to 50% (3)

50 to 75% (4)

75% or more (5)

Q17 Out of all your authors who published or presented reproducible research, what percent have asked for reproducibility guidance (e.g., policy questions, advice on tools, artifact/data submission)?

- None (1)
 - Under 25% (2)
 - 25 to 50% (3)
 - 50 to 75% (4)
 - 75% or more (5)
-

Q18 Which, if any, of the following tools to help enable participation in computational reproducibility? (Please select all that apply.)

- CodeOcean (1)
 - DataPort (2)
 - Docker (3)
 - ReproZip (4)
 - Other (please specify) (5)
-

Q19 Which, if any, of the following repositories do you recommend for computational reproducibility?

- GitHub (1)
- DataVerse (2)
- DataONE (3)
- Zenodo (4)
- Other (please specify) (5) _____

Q20 Do you encourage the use of any specific open license(s) for the artifacts?

Q21 Are there any barriers you observe or hear about from authors who are trying to conform to reproducibility policies?

Q26 If you have any additional comments regarding the role of journals and conferences in encouraging computational reproducibility, please indicate them here:

End of Block: Default Question Block
