CODE CHECK project

reviewing code in research publications

Daniel Nüst

https://codecheck.org.uk/

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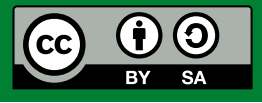


A process for independent reproduction of computations underlying research

The four CODE CHECK principles

1. Codecheckers are humans and communication is key.

- A human codechecker can understand docs
- *No* scientific judgement
- Effective two-way means of communication
- *Supported by* formal metadata, automation, and reproducibility infrastructure
- Diverse roles (ECRs, RSEs)

2. Codecheckers record but don't investigate or fix.

- *Not* fixing, but *document* state
- Interest + skills = collaboration & improvement
- Report informs the scientific review, but not evaluate scientific merit!
- Failed check != rejection

Codechecker take the pictures at a crime scene, they do not hunt the murderer.

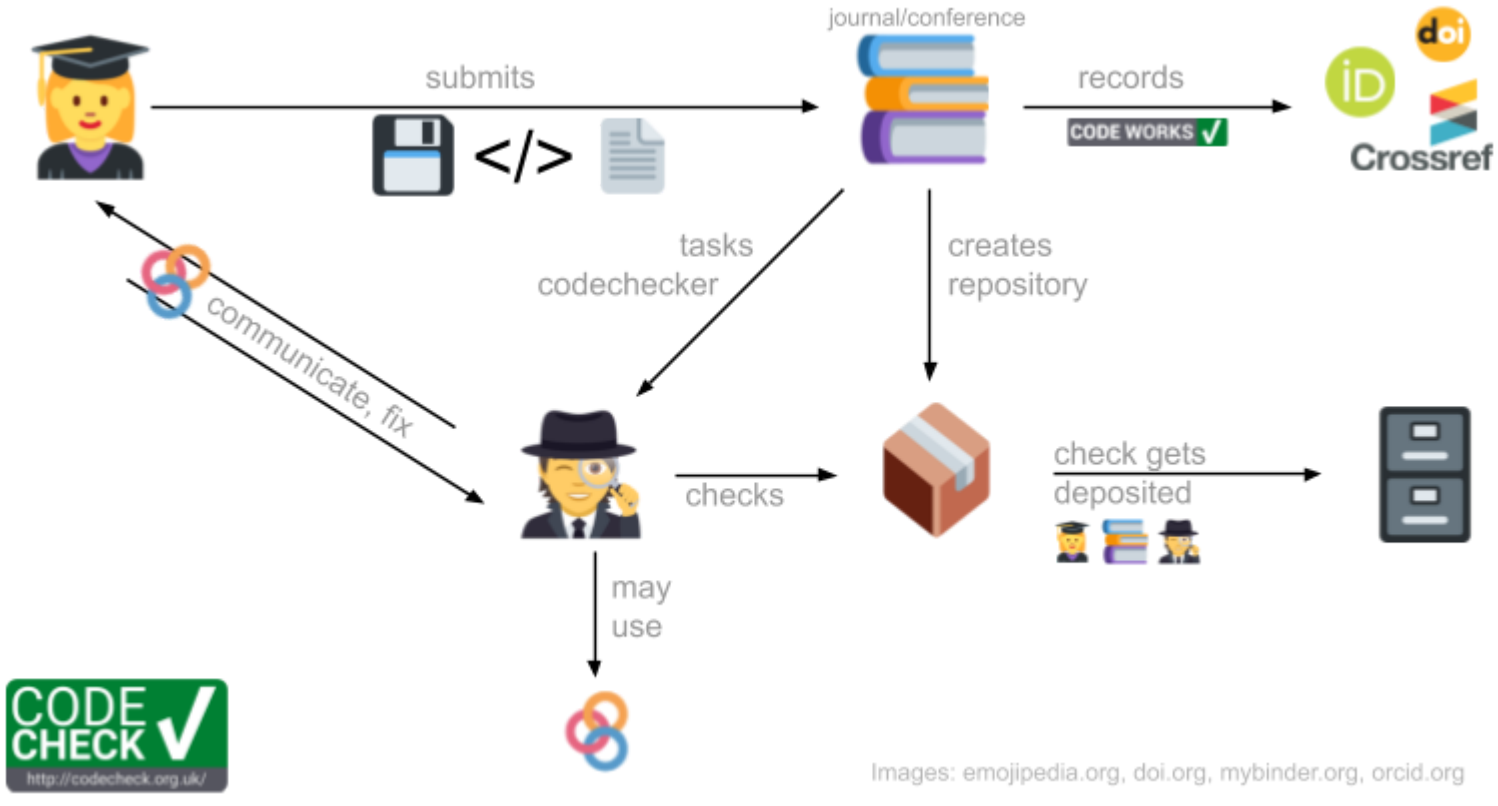
3. Credit is given to codecheckers.

- Software is crucial for research
- Check is contribution to the scientific body of knowledge
- If part of a review process
  - publisher ensures creditation equal to scientific reviewer
  - methods section *statement*
  - deposited metadata (not report):
    - codechecker's ORCID
    - time, journal
    - (article DOI)
- DOI-able report, URL in *statement*

4. Workflows are scripted, auditable, and they work.

- Common sense
  - documentation
  - degree of openness
  - amount of data
- Minimal requirement
  - Code executed once
  - Scripted workflow
- "Everything is there" *for the checked data & code*, and auditable
- Not all steps must be checked

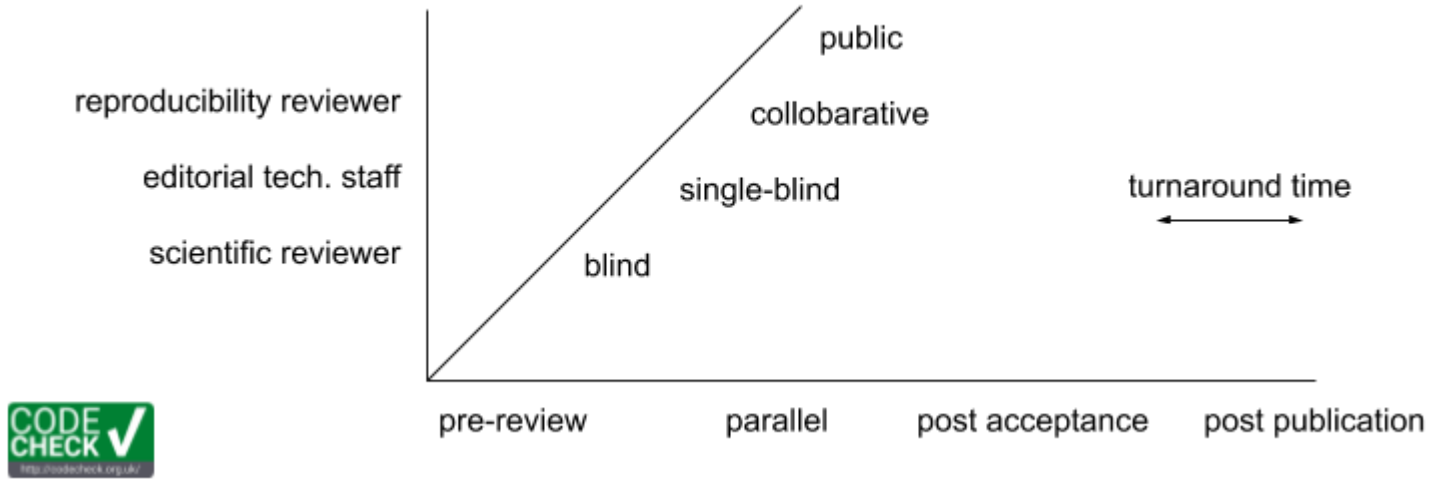
Implementing the CODE CHECK process



Sketch of steps to implement a CODE CHECK.

CODE WORKS

Process variations



- Post review with extra role
- Pre-review with extra role on staff
- Parallel reproducibility reviewer
- Regular reviewer
- Independent community pre-review

More?

More information: codecheck.org.uk

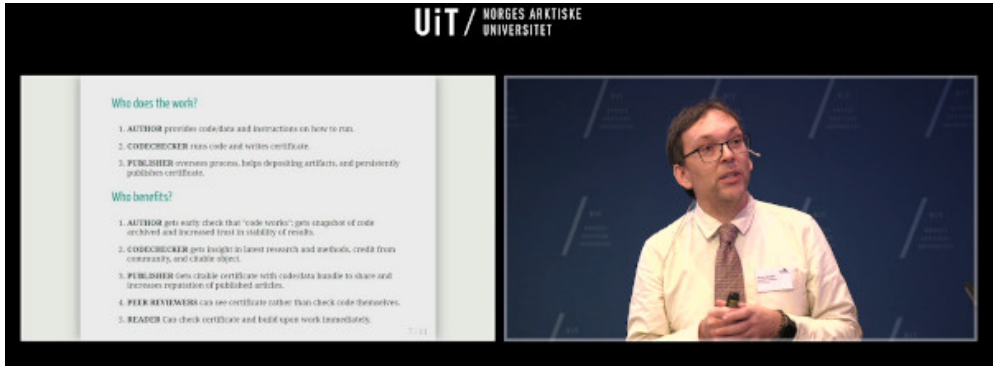
Team

- github.com/codecheckers
- StephenEglen
- nordholmen
- ✉ Stephen Eglen, University of Cambridge
- ✉ Daniel Nüst, ifgi, University of Münster

The project is supported by a Mozilla Open Science Mini-Grant (see official announcement) from February 2019 to May 2020.

Material

Watch Stephen's talk at The 14th Munin Conference on Scholarly Publishing 2019:



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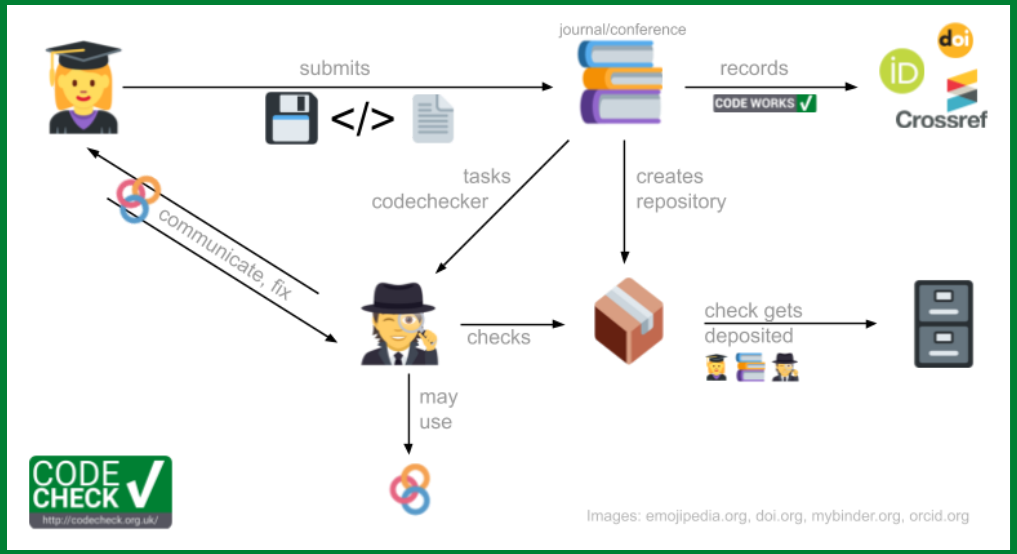

CODE WORKS ✓