AUSTRIAN INSTITUTE OF TECHNOLOGY

TOMORROW TODAY

OpenUP

Testing Open Peer Review (OPR) for Conferences

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https://github.com/mthz/hotcrp

With Content Taken from OpenUP D3.4 by Edit Görögh et al

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Why Use Peer Reviews?

- Part of the Scientific Communication (>1945!)
  - Content is submitted for publication (e.g. a journal or a conference)
  - Scientific peers review to check for flaws and novelty
  - Decision based on the peer review
- Quality Control
  - Prevent errors and plagiarism
  - Crucial for integrity and reputation of publisher
  - Help scientists pre-filter and focus
- Access Control?
  - Implications for scientific career

NEW

Traditional Peer Review Flawed?

- Single / Double – Blind
  - Reviewer's identity is hidden
  - No accountability for bad quality reviews
  - No visibility for reviewer's work / quality
  - Ghost-writing of reviews very common
- Editors have to hand-pick reviewers
  - Exponential growth in submissions
  - Only limit number of reviewers available
- Process is hidden from authors
  - Appointment and management of review is hidden
  - Decisions for acceptance / rejection are unclear

Opening up Peer Review

Open Report

Open Identity

Open platforms

OPR

Open Participation

arXiv.org

Open Pre-review

Open Final-version Comments

Open Interaction

Ross-Hellauer, T. (2017) "What is open peer review? A systematic review"

Detail OPR Features (1)

- **Open Identity:**
  - Authors and reviewers are aware of each other's identity
  - Single/double-blind phase(s) can precede the final round & release of identities

- **Open Participation:**
  - A larger community is involved in the reviews
  - Inclusion of „layman" reviewers vs. „expert" reviewers
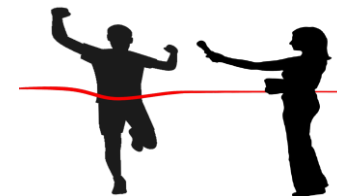
- **Open Interaction:**
  - Direct discussions between authors and reviewers

Detail OPR Features (2)

- **Open Final-version Comments:**
  - Public discussions after the verdict
  - Discussions after the conference / publication
  - Opens up chance for better errata

- **Open Pre-review**
  - Publicize content / pre-print version before review

- **Open Report:**
  - Review report is published alongside the publication

- **Open Platforms:**
  - Decouple review from publication (2 platforms)

Meet H2020 Project OpenUP

- **New Methods, Indicators and Tools for**
  - Peer review
  - Dissemination of research results
  - Impact measurement

- **Goal 1: Interaction**
  - Directly involve Scientific Community
  - Multiple Pilot Studies to gather real-world feedback

- **Goal 2: Tangible Results**
  - https://www.openuphub.eu/
  - Policy Recommendation for European Commission

Testing OPR Aspects: Two Venues

- **EMVA Forum 2017**
  - European Machine Vision Forum
  - Application-oriented research
  - Foster cooperation between industry and academic institutes
  - About 100 participants

- **eHealth2018 Conference**
  - Health Informatics meets eHealth
  - Improve the quality and efficiency of health care
 - About 300 participants

Setup 1: EMVA Forum

- Submissions for Oral Presentations (13)
  - After submission deadline: all conference attendees can see submissions and discuss with authors; all identities are open
  - Expert reviewers assigned by program chair -> one paragraph of comments instead of structured review
- Public Voting for the Ten Best Submissions
  - Each program committee member got ten votes
  - Each conference attendee gets four votes
  - Public final voting results
  - First ten submissions got oral presentation spot
- Discussions after conference-ending in CMS
 - All data visible to the general public

Open Participation

Open Interaction

Open Identity

Open Report

Open Final-version Comments

Preparations: eHealth2018

- Reservations after Initial Agreement
  - Fear of loosing reviewer's trust
  - Fear of loosing publisher for proceedings

- Compromise: Best Master Paper Contest
  - Small subset of participants (15 expected, six received)
  - Students at the start of scientific career
  - Selected reviewers interested in OPR
 - Proceedings publisher was asked: no problems with the new process

By Frits Ahlefeldt
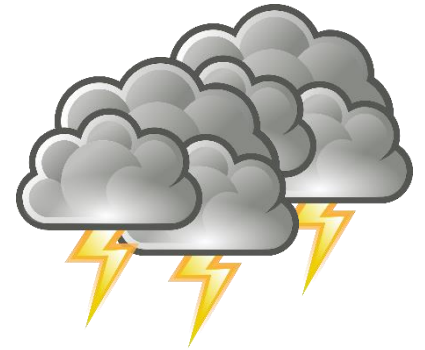
Setup 2: eHealth2018

- First review Phase Classic:
  - Single-Blind [with a twist ;)]
  - Program chair appointed expert reviewers

- Author's Decision Based on first Review:
  - Remain in the competition (reveals content & identities)
  - Withdraw submission (no disclosures)

- Second Review Phase:
  - Each author was assigned to do <u>two lay-man reviews</u> of his competitors
  - All previous and new discussions & identities visible to all participants of the competition

- Program committee issued final ranking

Open Participation

Open Interaction

Open Identity
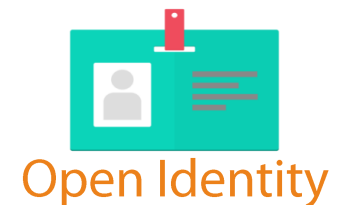
The Right Tool for the Job: CMS

- **Classic Conference Management Software**
  - Submission
  - Review assignment
  - Review viewing and editing
  - Rebuttal / multiple rounds of reviewing
  - Voting / decision process
  - Decision publication
  - Gather final version

- **Today: Web-Applications**
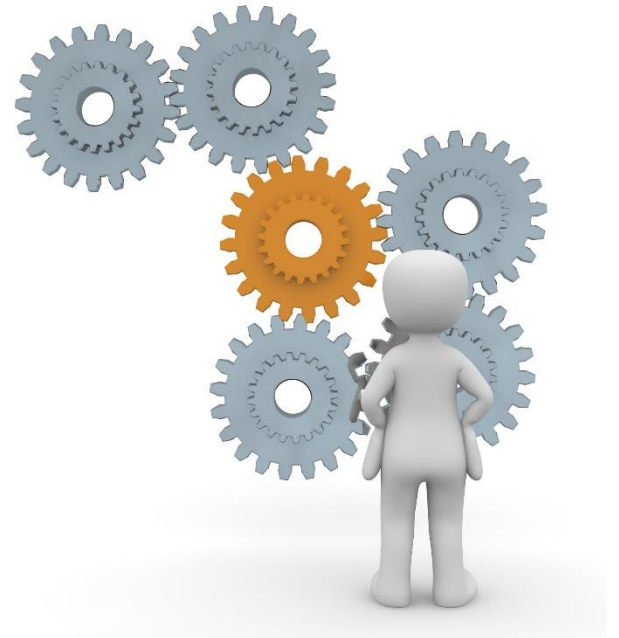
Supporting OPR in CMS

- **Existing Solutions not Flexible Enough**
  - Novel concepts of pilots not present
  - Closed-source / commercial software not changeable

- **New branch of OPR Open Source SW**
  - Initial SotA study for existing open source CMS
  - We chose HotCRP:
    - many features implemented
    - relative easy to modify
    - active community
    - BSD-like license
  - All needed concepts for both pilots were added
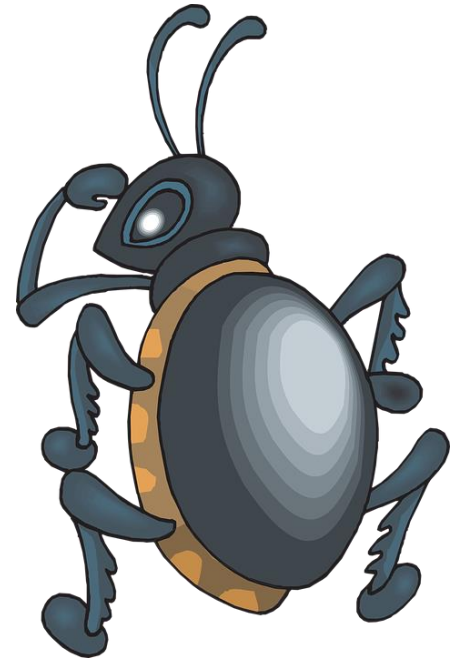
Feedback EMVA (19 of 22)

- ## High Acceptance of OPR:
  - Clearness of execution and implementation/CMS interface: 94% strongly agree
  - Acceptance of OPR (review phase): 100% strongly agree
  - Acceptance of OPR (voting phase): 88% strongly agree
  - Overall acceptance of OPR approach, would support again: 94% strongly agree

- ## Biggest Concern:
  - Open identity skewed feedback towards too much positivity: 69% agreed

Feedback eHealth2018 (6 of 15)

- OPR Was Well Accepted:
  - Clearness of execution and implementation/CMS interface: 83% agree
  - Acceptance of OPR (lay-man reviews): 50% strongly agree
  - Acceptance of OPR (open identity): 67% strongly agree
  - Overall acceptance of OPR approach, would support again: 83% strongly agree

- Biggest Concern:
  - Open identity skewed feedback towards too much positivity: 17% agreed

Qualitative Feedback

- Positive:
  - Less effort (one paragraph vs. full reviews)
 - Include all authors in the voting

- Negative:
  - Whitewashed reviews due to non-anonymity
  - Backlash for critical reviews
  - Lay-man review could make the reviewer look bad
  - Lay-man review offers too little value for the time invested

Summary & Outlook

- **Testing OPR still difficult**
  - Many fears associated with Open Identity (loose expert reviewers)
  - Organizers feared that new process will void publisher agreements
  - Actual publisher had no issues -> just ask beforehand
- **OPR was in general very well received**
  - Strong acceptance
  - Most would support OPR process again
- **Many ways to improve traditional peer review**
  - Choose mix you feel comfortable with
  - Make first round double-blind
  - Allow for retraction of submission while in double-blind mode
- **OPR branch of CMS**
  - Freely available, continues as open source software
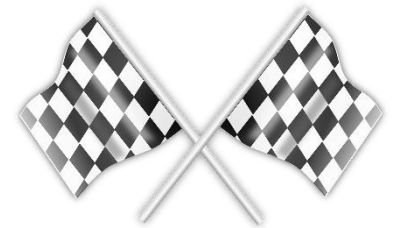
Thank You!

Open Source Release
of our OPR CMS branch:

https://github.com/mthz/hotcrp

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