The GII-GRIN-SCIE (GGS) conference ranking initiative

Paolo Atzeni

Università Roma Tre

(on behalf of GRIN and GII)

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Motivation

- Research assessment in Italy and Spain mostly uses a bibliometric approach
- The main bibliometric sources (such as Scopus, ISI/WoS) do not consider conferences adequately
- As a consequence
  - the evaluation exhibits a systemic bias, as the international community does consider conferences as very important
  - the evaluation disincentivizes publications at major conferences, reducing the impact of national research
- Concern on the issue is limited to our community, being the only one (or one of the few) for which conferences are important

Research Assessment in Italy

- Italy has adopted a regular and mandatory research assessment approach, involving all researchers at Universities and Public Research Organizations with impact on performance-based funding (which is a non-marginal fraction of the budget of each university)
- The process requires a massive evaluation of research products (VQR):
  - The national agency ANVUR provides a list of journals and bibliometrics indicators based on Scopus and Clarivate WoS (e.g. SJR, AIS, MCQ).
  - A group of evaluators (GEV) of each macro area (e.g. GEV01 Mathematics and Computer Science, GEV09 Industrial and Information Engineering) evaluates the products using "informed peer review" and external reviewers
  - VQR 2004-2010: 184.878 products evaluated by 14 groups of experts (450 researchers) and 14470 reviewers
- Quantitative indicators are also used as thresholds for candidates to the National Scientific Habilitation (ASN)

Discussion on the research assessment

- Government and public opinion got convinced that
    - research assessment is needed
    - rankings are useful
    - funding should be allocated as a consequence of rankings
    - rankings should be based on "objective" criteria
    - metrics/indicators are the best objective criteria
- Our community believes that
    - research assessment is needed
    - research should be evaluated by looking at content and results
    - evaluation should be performed by humans, who should be accountable for the evaluation

Why conference rankings (or ratings)?

- It is the case that
  - we disagree with the widespread use of bibliometric approaches
  - but they are used
- The approach used in Italy also makes use of peer review, but we often face a difficulty:
  - in committees that cover wide areas (informatics as well as other fields), members from other fields tend to criticize conference papers, claiming that their quality cannot reach that of journal paper
  - so we need arguments that support that there are conferences whose standards are comparable with those of journals

Major observation

- We do need a better consideration for conferences:
  - to improve accuracy of the assessment
  - to make sure our colleagues (especially the junior ones) are both appreciated at home and allowed to participate in the international community
- This does not mean that we support a bibliometric approach to research evaluation, but that we try to improve the components of the evaluation approaches that use "objective" evidence

The GII-GRIN-SCIE (GGS) Conference Ranking Initiative

- Conference publications are considered important for computer scientists but not included in the ANVUR list of the different VQR editions

- From 2013 to 2018, a joint committee of GII, GRIN and SCIE members worked on a unified rating of computer science conferences based on a combination of bibliometric and non-bibliometric approaches

- The GGS ranking has been adopted (mainly on the basis of individual and panel member decision) as an additional evaluation tool in

  - the VQR procedure (Computer Science GEV)
  - in the ASN habilitation procedure
  - in local selections for academic positions

The GII-GRIN-SCIE (GGS) Conference Ranking Initiative

- The GGS algorithm classifies conferences within four main tiers:
  - A++,A+: top notch
  - A,A+: very high-quality events
  - B,B-: events of good quality
  - Work in progress

- The ranking is based on a weighted combination of the CORE ranking and of the other bibliometric sources
- The algorithm applies a normalization step (number of citations/number of publication) in the conversion from pure bibliometric data to categorical data

Brief history

- A committee was formed in 2014 by GII and GRIN
- A first version was published in 2015
- An agreement with SCIE was activated in 2017
- Four releases (all available on the Web site)
  - 2015
  - 2017
  - 2018
  - 2021

The GGS Data Sources through the years

- The first version (2013) was based on
  - The CORE Conference Ranking: a mix of bibliometric indexes and peer-review by a committee of experts
  - The Microsoft Academic Research Conference Ranking: H-Index of the conference within the field
  - The SHINE Google-Scholar-Based Conference Ranking: H-Index on Google Scholar
- LiveSHINE (a plugin of Google Chrome) replaced SHINE in the ranking released in 2018
- For MA and Liveshine the algorithm considers both the H-index of the conference and an IF-like indicator (total number of citations/total number of publication in the conference)
- LiveSHINE was discontinued at the end of 2018
- The 2021 GGS update is based on CORE 2021, MA 2021 and LiveSHINE 2018

The algorithm

- Source selection
- Entity resolution
- Evaluation of primary class and IF
- Combination of primary class and IF
- Aggregation of indexes

Another approach
(also used as input by the GGS rating)

CORE Conference Ranking

- The CORE (Computing Research and Education Association of Australasia) Conference Ranking
  - assessments of major conferences in the computing disciplines.
  - rankings are managed by the CORE Executive Committee,
  - with periodic rounds for submission of requests for addition or reranking of conferences.
  - decisions are made by academic committees based on objective data requested as part of the submission process.
- The last call for submissions of ranking request/update was in 2020 followed by a rebuttal phase in which applicants had the opportunity to send additional data (e.g. to avoid downgrades)
- From the 2021 Ranking Process documentation:
  "In this round over 400 conferences were considered, of which 300 were reviews of existing venues in the DB. Of those being reviewed 10% of conferences got ranked higher, 30% lower, while 60% stayed the same. The larger % of conferences being ranked lower was to be expected, given the pro-active effort to identify A or A* conferences that with initial data looked like they required review, often not having been reviewed in over 10 years."

CORE: Pros

- The ranking committee evaluate "submissions of conference data" by considering
  - "How well are papers from the venue cited":
    A combination of bibliometric data from Google scholar h5, CORE's analysis of Elsevier data, ACM average citations (if available), and citations of the most influential papers from the venue (from Aminer if available).
  - "To what extent are strong and top researchers publishing in a conference and engaged"
    Based on the analysis of Elsevier data
  - "How strong and how engaged is the PC"
    The PC profile is based on a summary of Elsevier h-index
  - High acceptance rates or all Chairs being quite junior can be negative indicators.

CORE: Cons

- Due to the limited number of international researchers involved in the submission and evaluation process, the coverage of informatics conferences is far not complete
  - Australasian FoR areas do not match ERC fields
  - The CORE database contains less than 1000 conferences
  - DBLP contains more than 5800 conferences

The GGS Ranking in 2022?

- Short Term:
  Although CORE is still a valid and up-to-date source, an algorithmic approach similar to that used in the GGS '15,'18,'21 editions requires additional sources to enlarge the coverage of informatics fields of research
  E.g., MA (still possible?), data mining algorithms such as Aminer, Open Citations

- Long Term:
  An interesting alternative would be to create a conference ranking based on a mix approach (peer review and indicators) by extending the CORE ranking boards with additional members of European informatics associations EACS and Informatics Europe: ERC Fields of Research, Open Citations