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Abstract:

Do-It-Yourself Measures for Academic Success

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Measures - what they should be (but usually are not)

$\longrightarrow$ Measures should work *for* scientists

- Heterogeneous
- Transparent, customizable
- Bottom-up
- Revised over time

Measures - get rid of them?

- Carefully read up on hundreds of applicants?
- Objectively?

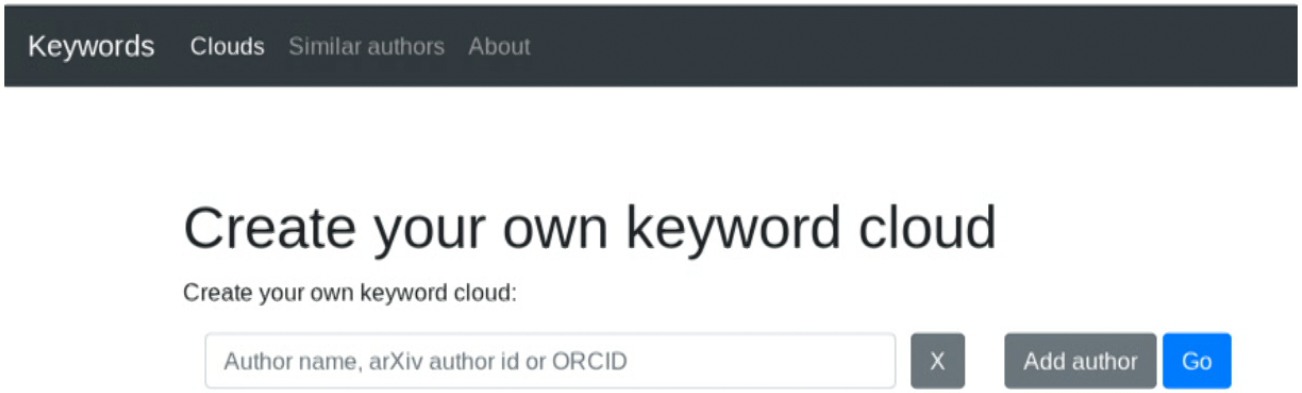
Measures - have to improve them!

- Make them useful to the community
- How?

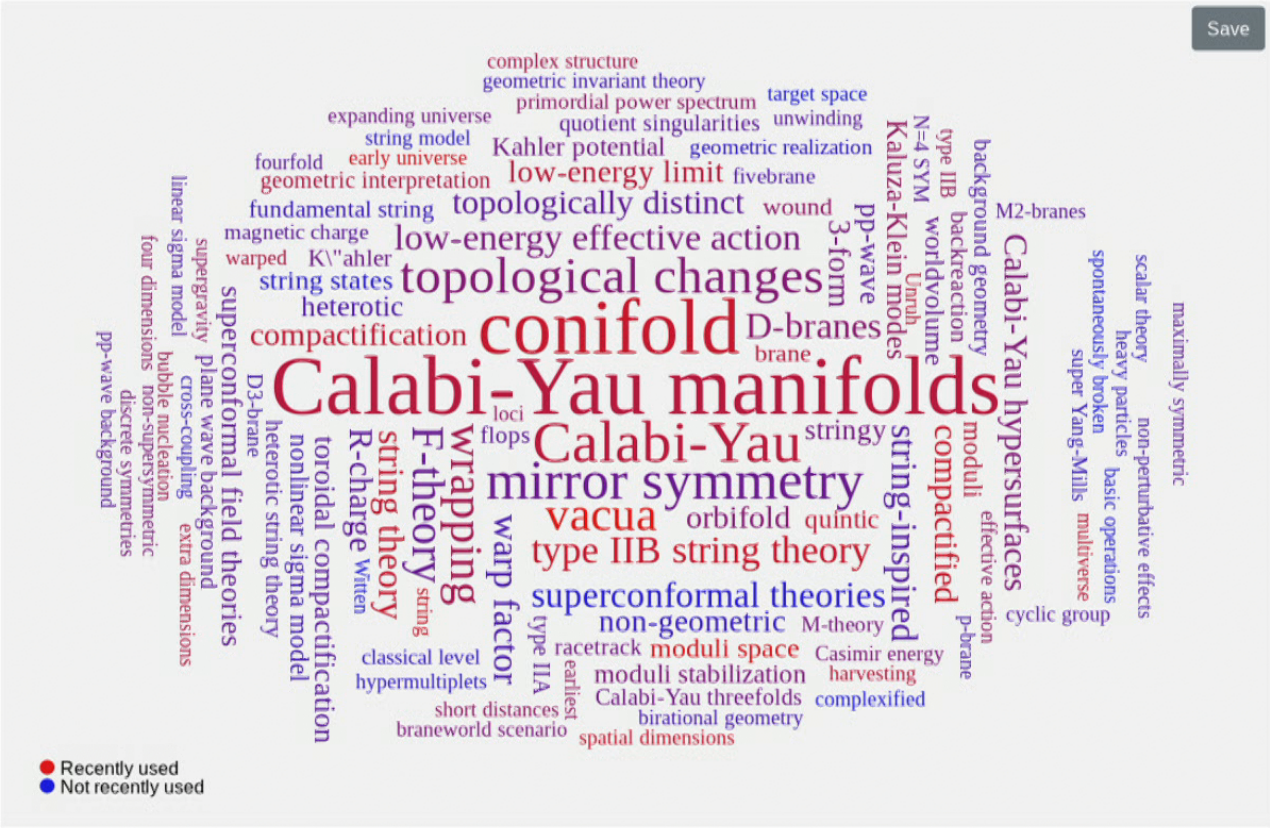
Work so far - Keyword analysis and clouds

http://www.scimeter.org/

Work so far - Keyword analysis and clouds



Work so far - Keyword analysis and clouds



Want to exclude specific keywords or papers from the keywords cloud?

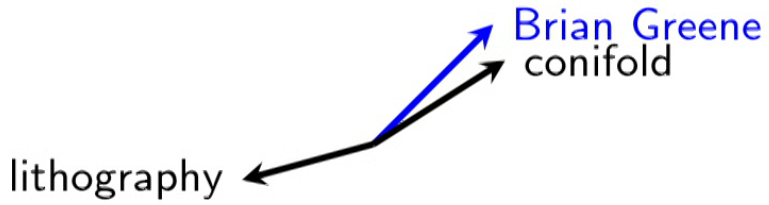
Customize cloud

Work so far - Keyword analysis and clouds

- Data: from arXiv
- Identify keywords in titles and abstracts
- Throw away out "generic" words
  Keep: "Calabi-Yau manifolds", "conifold", ...
  Don't keep: "This is", "Therefore", ...
- Generic = little mutual information with arXiv category

Work so far - Keyword analysis and clouds

- Vectorization of keywords as well as authors (in the same 200-dim. vector space)
- Made-up example:



- Can identify keywords that describe an author well but were never "literally" used by that author

Work so far - Keyword analysis and clouds

Keywords Clouds Similar authors About

1. Vishnu Jejjala
2. John Stout
3. Antonio Segui
4. Wei Gu
5. Pontus Ahlqvist
6. Lars Nilse
7. Frank Saueressig
8. Nana Cabo Bizet
9. William Cottrell
10. Anindya Dey
11. Chien-Hsun Wang
12. Aradhya Shukla
13. Stephen Shenker
14. Albion Lawrence
15. Pedro Resco
16. Morten Ernebjerg
17. Miguel Montero
18. David Vegh
19. Cody Long
20. Tibra Ali
21. David Kagan
22. Ayush Saurabh
23. Prabwal Phukon
24. Michal Fabinger
25. Armen Yeranyan
26. Sunggeun Lee

Measures - give them to the community!

Do-It-Yourself Measures:

- Users can assemble their own measures weighting different factors (#papers, #citations, #single-authored papers, *h*-index, pagerank, JIF, #coauthors, ...)
- Apply to list of authors
- Measures can be shared, combined, blended

Measures - give them to the community!

- Addresses traditional issues of measures
  - Heterogeneous
  - Transparent, Customizable
  - Bottom-up
  - Revised over time

Measures - give them to the community!

- Aggregation of which measures other users perceive as useful
- Include new factors
- E.g.: How well does a researcher's keywords match those of your institute?

Measures - Disclaimer

This is *not* about

- finding the one best measure
- and then tell everybody to use that

But

- Creating a community-driven platform
- to create a *variety* of useful measures
- and changing the way measures are used

Work in progress - Neural net predictor as a measure?

- Another possible new factor to be used in DIY measures
- Neural net trained to predict e.g. future h-index or #citations
- Experiment with input from keyword/author vectorization

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Summary

- Measures have issues, but are necessary
- DIY measures may help the community
- Currently available: Tools for creating keyword clouds of research interests + finding similar authors

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