Pre2Pub—Tracking the Path From Preprint to Journal Article: Algorithm Development and Validation

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Why this article?

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- Indexed in: ISI, Scopus, PubMed, ….
- Publisher/Holder: JMIR Publications
- “Tracking methods ”

2020 Impact Factor: 5.43

Study's goals

- investigating the extent to which the relationship information between preprint and corresponding journal publication is present in the published metadata
- how it can be further completed
- how it can be used in preVIEW to identify already republished preprints and filter those duplicates in search results

Introduction

- The publication of preprints, has gained popularity in recent years. the current COVID-19 pandemic shed new light on this type of publication because it allows researchers to communicate new findings quickly,

- Although preprints can be a very valuable source of information, there is a wide range of quality that cannot be assessed without close examination of the content

- The WHO titles the overabundance of both correct and incorrect information during a disease outbreak an “infodemic”. Therefore, preprints must be carefully integrated into existing information infrastructures


PubMed


Europe PMC

https://preview.zbmed.de

preVIEW: COVID-19

ABOUT TUTORIAL CONTACT

ZB MED Informationszentrum Lebenswissenschaften

The ZB MED preprint Viewer preVIEW: COVID-19 includes 44.780 COVID-19 related preprints from medRxiv (15.212) and bioRxiv (5.332), ChemRxiv (275), ResearchSquare (8.428), arXiv (5.961) and from Preprints.org (1.793). The service has last been updated 9 hours ago. We try to update the data on a daily basis (7am CET/CEST).
The web page can also be accessed via API.
If you use our application, please cite: 10.3233/SHTI210124 and 10.32384/jeahil17484

Query builder | Expert Search | Help

Multi | enter a search term

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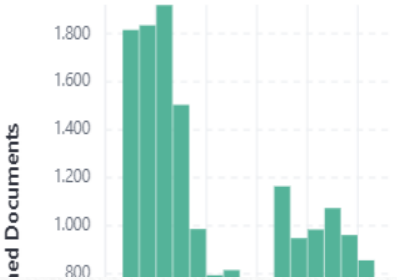
Feedback

Publication Date



Refine your search. Currently 44.780 documents are matched

‹ 1 2 3 4 5 ... 2239 ›

Documents per page: 20

enable feedback mode

Expand all abstracts

SARS-CoV-2 infection -induced immunity and the duration of viral shedding: results from a Nicaraguan household cohort study

Highlight semantic

What is preVIEW?

- a new preprint service and semantic search engine that currently combines more than 40,000 COVID-19–related preprints from 7 different sources
- Use Pre2Pub Algorithm
- Update data on a daily basis (7am)

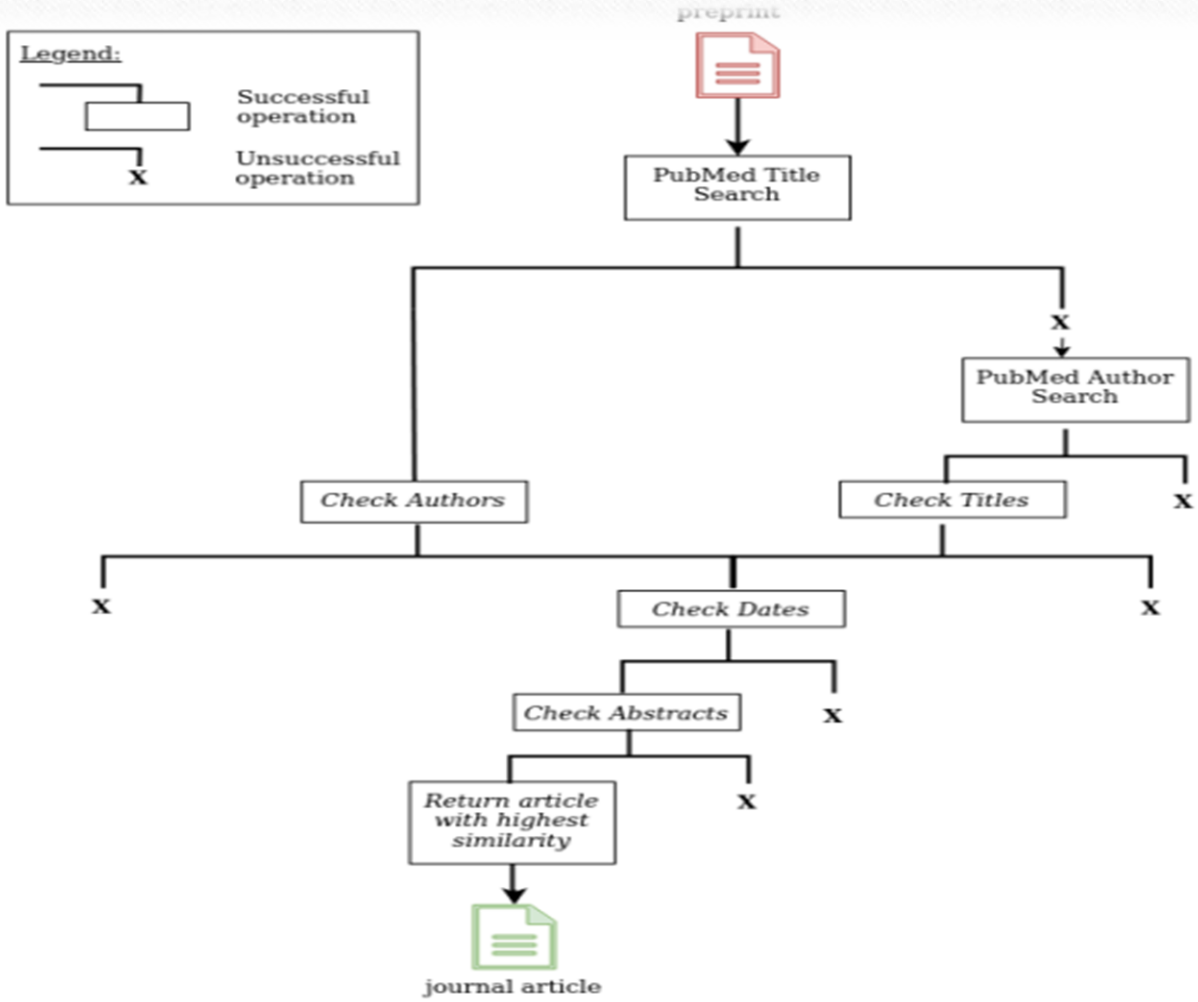
What is Pre2Pub Algorithm?

- ✓ This algorithm uses a preprint DOI as input and searches for corresponding journal article in PubMed

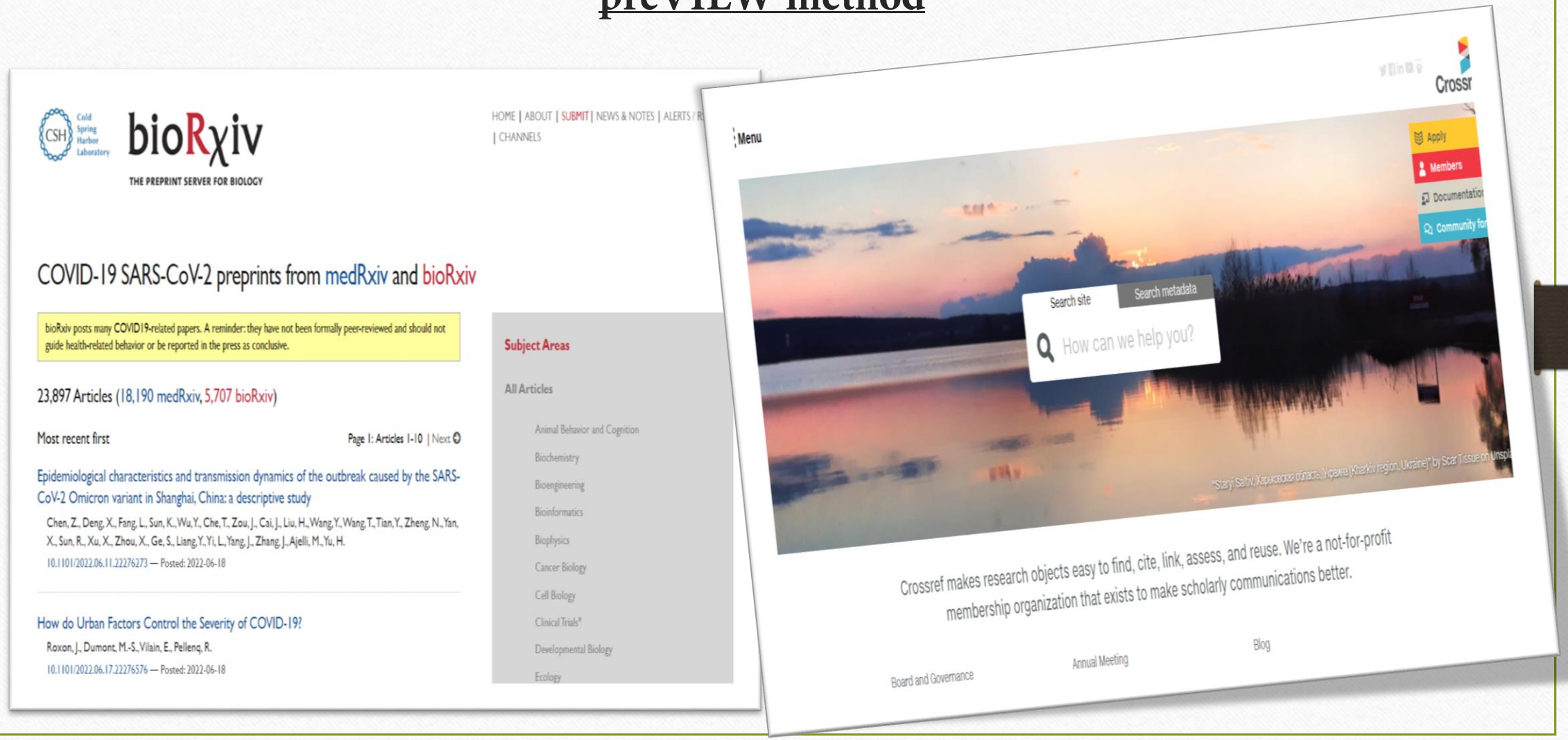
- ✓ Has 5 steps:

1. Compare titles
2. Compare author's name after title review
3. Search authors name in author field
4. Compare the dated of publication
5. Compare abstracts

Pre2Pub Algorithm



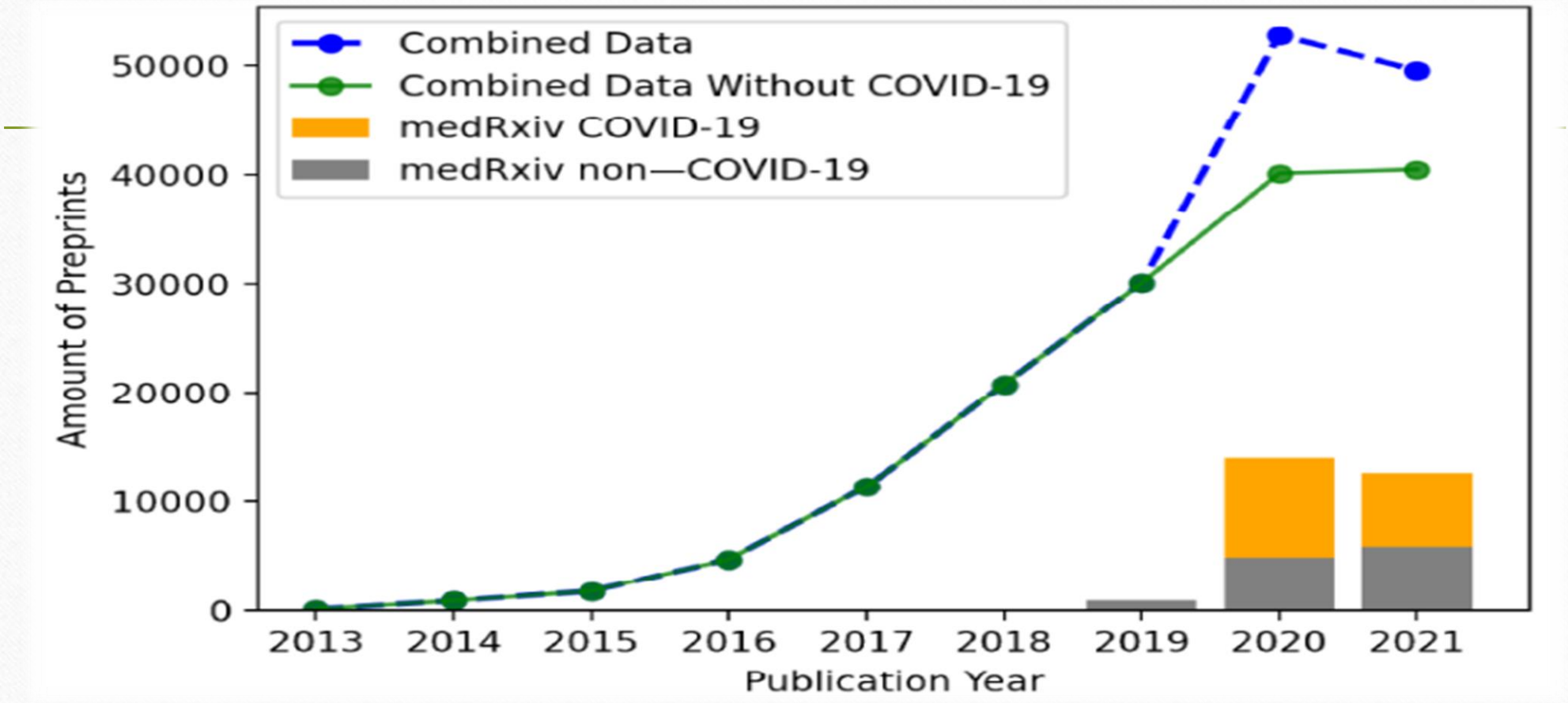
preVIEW method



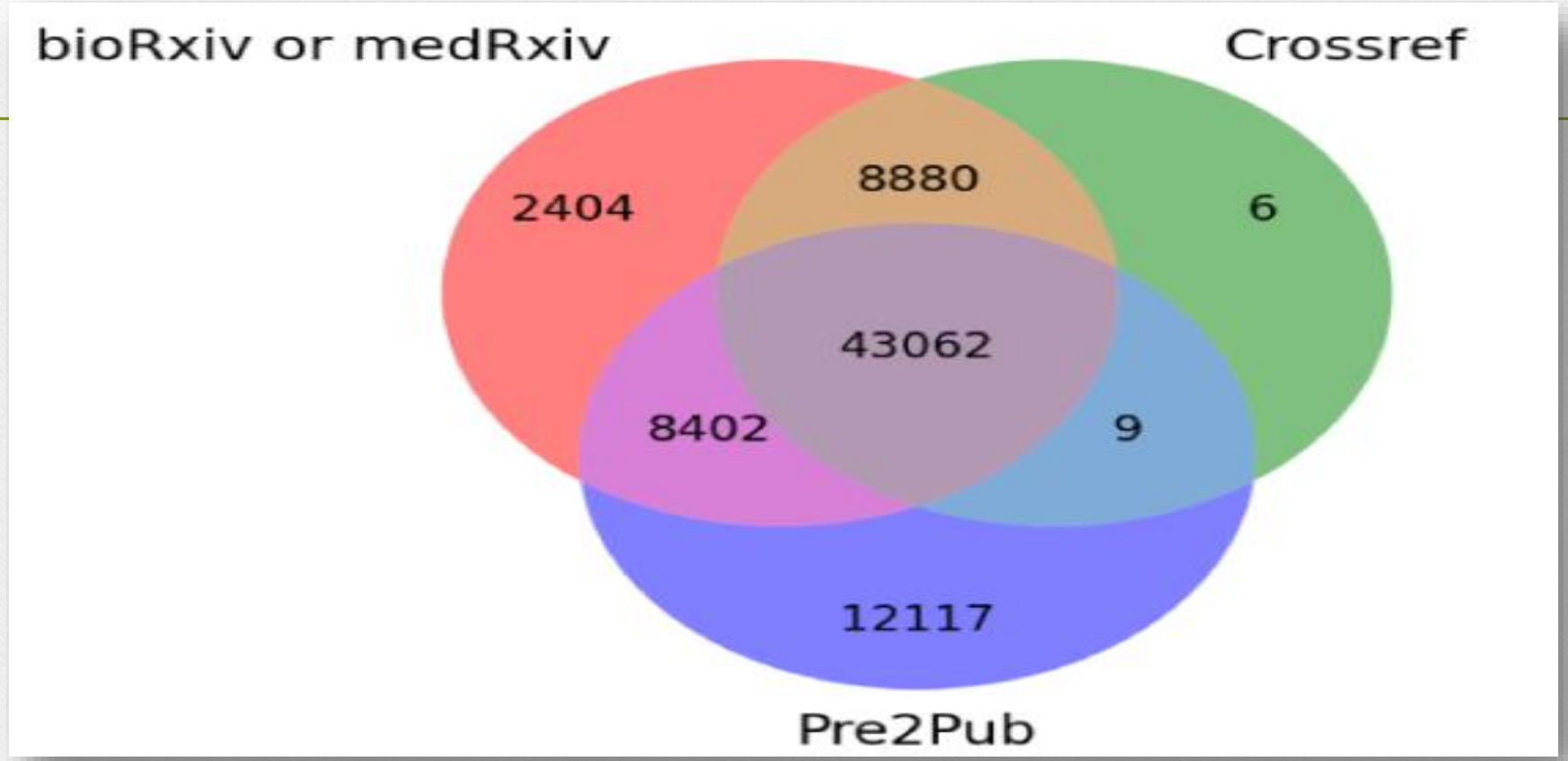
Results

The link from a preprint to its corresponding journal publication is not completely covered in the metadata of the preprint servers or in Crossref. The algorithm Pre2Pub is able to find approximately 16% more related journal articles with a precision of 99.27%. As long as there is no transparent and complete way to store this relationship in metadata, the Pre2Pub algorithm is a suitable extension to retrieve this information

Growth of preprint publications



Amount and intersection of found journal articles for 3 different methods



Evaluation of Pre2Pub

Table 2. Evaluation results of Pre2Pub on training and test data.

Data set	Precision, %	Recall, %	F_1-score, %
Training data	99.10	82.64	90.13
Test data	99.27	81.14	89.29

Table 3. Examples of false-positive and false-negative matches found by Pre2Pub

Preprint digital objective identifier	Journal digital object identifier found		Error Analysis
	bioRxiv/medRxiv	Pre2Pub	
10.1101/669713	10.1016/j.bpj.2019.11.1890	10.1016/j.bpj.2020.02.011	bioRxiv links only to conference abstracts, whereas Pre2Pub finds the corresponding article
10.1101/845933	10.1016/j.cub.2020.03.005	10.1111/ejn.15056	The correct article is not indexed in PubMed; the found article has the same first and last author and describes a related topic
10.1101/503763	10.1016/j.neuroim-age.2019.1161	10.1016/j.neuroim-age.2019.116186	Broken link at bioRxiv (incomplete digital object identifi-er); Pre2Pub finds the correct article
10.1101/549840	10.1128/mBio.00388-19	—[a]	No results via the application programming interface[b]
10.1101/2020.03.06.980631	10.1039/D0GC00903B	—	Article is not indexed in PubMed
10.1101/405597	10.1523/JNEUROSCI.0555-20.2020	—	Titles differ too much

Overview of the amount of bio- and medRxiv preprints

Year	COVID-19	Amount, n	Published, n (%)
2019	No	30,094	22,776 (75.68%)
2020	No	40,862	28,177 (68.96%)
2020	Yes	11,918	6920 (58.06%)
2021	No	40,441	13,489 (33.35%)
2021	Yes	9024	3518 (38.98%)


Thank you