

Author and Research Identifiers: An overview

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Abstract

Scholar publishing industry, scholar communication and scientific research begun to move at much higher speed and with more effective channels in the changing scenario of digital pedagogy, learning and research. With latest development in open access revolution publishing and electronic repositories platforms are also growing with much pace. One of the big problems associated to the research community is to attributing research activities and an output correctly to a researcher is name ambiguities. Funding agencies, universities, and research institutes all face challenges of reliably identifying their researchers and monitoring outcomes over time. The paper discusses an overview on Research -Author Identifiers tools and platforms and their benefits in scholar communication environment. Different social networking platforms and their features are highlighted and importance of Author identifiers and how libraries can play an integrated role in research cycle is explained critically.

Keywords: Author identifiers, Research identifiers, social networking, scholar communication.

1. Introduction

The number of publications in any field increases immensely every year. It has become very difficult for a researcher to keep track of all recent publications even in relatively well defined disciplines. That means that it becomes more important to make a publication more visible so it won't be overlooked. Scholarly output is characterized not only for outreach, since the articles researcher write are identified uniquely by a Digital Object Identifier (DOI). A book or journal is identified by an ISBN, and citations are identified by certain metrics, and so on. The important aspect is here to address the identification process for individual publications and citations to the point of providing unique descriptors for each author or researcher and to uniquely identify all of each author's scholarly work.¹

Scholar publishing industry, scholar communication and scientific research begun to move at much higher speed and with more effective channels in the changing scenario of digital pedagogy, learning and research. With latest development in open access revolution publishing and electronic repositories platforms are also growing with much pace. One of the big problems associated to the research community is to attributing research activities and an output correctly to a researcher is name ambiguities. Funding agencies, universities, and research institutes all face challenges of reliably identifying their researchers and monitoring outcomes over time.

Journal and articles' quality assessment both depends on many facets, but one of the essential facet of assessment is the ability to connect the correct researcher with his own scholarly output. But obstacles arise through numerous ways like, several researchers having the same

or similar names, researchers sometimes publishing under name variations, researchers moving from institution to institution, and, now, the increased frequency of researchers crossing strict disciplinary lines to work in other areas or collaborate with those in other areas. Though, many researchers share the same name, while others have different names during their career, or different variations of the same name. As a result, it becomes too difficult to link a researcher with her publications and research outputs across the course of their career.

Author name identification and proper attribution of one's scholarly output is critical to an individual's reputation and career. Name ambiguity is a reoccurring issue that affects career advancement and tenure, global collaboration between researchers, and grant funding.² Many efforts are currently underway to disambiguate author names and assign unique identification numbers so that the publications or research work by a given scholar can be reliably grouped together. Some database producers are using a combination of computer algorithms and manual intervention to assign author identification numbers and thereby cluster publications as records are entered into their systems. Author name disambiguation and the association of scholarly works with the correct author have long been a problem for those wishing to develop a comprehensive list of publications for individuals.

To understand Identify crisis from Author or researcher perspective it will be best to refer one of the feature article published in Nature³, three researchers in Jia Wei's lab with the surname Wang, Xiao-yan, Xiao-rong and Xiao-xue, all publish in English as X. Wang. Another best example quoted by Yoshimura.K. S (2014)⁴ is Noam Chomsky who is a scholar widely translated. WorldCat has records for his works in fifty languages. But only some of the forms of his name are represented as "preferred forms" in national authority files.

Author profile information collected with the help of unique author identifiers improves knowledge discovery; it becomes much easier to find other scholarly works by the same author or other authors with similar research interests. Academic metrics are increasingly used to make funding and job hiring decisions and this is done by trying to put the reputation of an academic, department or institution into numbers.

In scholar communication cycle there are various trends going on which need to be address. These are, increase in number of co-authors, shift from publishing in books to journals, conversion to print to digital formats, increasing diversity in citable scholarly outputs. To address these trends different stakeholders had their respective objectives to tackle the problems, few of them are⁴:

Researcher

- Disseminate research
- compile all outputs
- find collaborators
- ensure network presence
- retrieve other's scholarly output to track a given discipline

Funder

- track funded research outputs

Organization Administration

- Collate intellectual out of their researchers to fulfill funder or national mandates,

- Verify a researcher/work related to a researcher is represented
- aid in institutes ranking programs,
- internal reporting and appraisals

Aggregators (Publishers)

- collate intellectual output of the researcher
- disambiguate names
- link researcher's multiple identifiers
- track history of research's affiliations
- Track and communicate updates

Reputation and provenance in the scholarly context are typically used for knowledge discovery and academic metrics.⁵In today's advanced information retrieval and web technologies, scholars are having many options to adopt the tools needed to tackle these issues. Unique identifiers for scholarly authors are still not commonly used, but provide a number of benefits to authors, institutions, publishers, funding organizations and scholarly societies. Majorly, unique author identifiers are useful for the following reasons:

- Researchers want to find potential collaborators, and want an easier way to get credit for their scholarly activities,
- Institutions want to collect, showcase and often evaluate the scholarly activities of their faculty,
- Publishers want to simplify the publishing workflow, including peer review,
- Funding organizations want to simplify the grant submission workflow and want to track what happened to the research they funded, and
- Scholarly societies want an easier way to track the achievements of their members.

There are many popular Author Identifier systems for scholarly researchers listed are some of the popular tools given in the below table 1.

Table-1: Popular Author Identifier platforms

Parameters	ArXiv Author ID	Scopus Author ID	Researcher ID	ORCID ID	PubMed Author ID
Organization	Cornell University Library	Elsevier	Thomas Reuter	ORCHID	National Library medicine
Kind	Academic	Commercial	Commercial	Non profit	Government
Year	2005	2006	2008	2009	2010
Characteristics	Part of e-print archive (ArXiv)	Integrates with bibliographic database (Scopus)	Integrates with bibliographic database (Web of sciences)	Integrates with bibliographic databases (Crossref) and other author identifier systems	Part of several biomedical databases for publications and datasets (NCBI)
Disciplines	Physics, Mathematics, computer sciences and related disciplines	All	All	All	Life Sciences
Link	www.arxiv.org	www.scopus.com	www.researchid.com	www.orchid.org	www.pubmed.gov

Apart from these Author Identifier systems, Google Scholar Citations is a popular system where one can view citation metrics for the publications and get an email alert for the publications cited.

2. Social networks for researchers

Social networks can augment traditional means of scholarly communication, but with so many options available one should be clear on why you are using them and what one hope to achieve. There are many academic and professional networking sites which provide a platform to create a profile to increase the visibility and accessibility of your research output, share papers and follow colleagues or peers to view their research, identify potential collaborators and grow network and generate citation metrics which indicate the reach of their work.

Many people gave their opinion on importance social networking sites, few of them are cited based on the literature reviewed. According to Research Information Network (RIN), social media refers to the Internet services where the online content is generated by the users of the service⁶. In narrow sense scholarly communication refers to the process of publication of scholarly output. In broader sense it includes all types of communication among the peers for scholarly purpose. The rapid acceptance and use of social media in research have transformed the way the researchers communicate and disseminate information. Scholars depend on social media as it is easy to build new connections, disseminating research results and collaborating in research.^{7&8}. Al-Aufi and Fulton⁹ investigated the extent of use of SNS by academics for informal scholarly communication. Nicholas and Rowlands¹⁰ identified social media use in different stages of research. The stages are; identifying research opportunities, finding collaborators, securing funding support, reviewing literature, collecting research data, analyzing research data, disseminating findings and managing the research process. Followings are the social networking tools available for researchers to explore for their research outreach and networking building interest to their subject domain.

Google Scholar—It was found in 2004. It is a freely accessible web search engine that indexes the full text or metadata of scholarly literature across an array of publishing formats and disciplines. Google Scholar is similar in function to the freely available CiteSeerX and get CITED. It allows researchers to create their own profiles upload their research papers and track of citations to their articles. One can see who is citing your publications, graph citations over time, and compute several citation metrics.

Research Gate-Research gate was founded in 2008. It is a social networking site for scientists and researchers to share papers, and find collaborators particularly those engaged in broadly scientific research. It incorporates many elements of familiar social media sites like -Liking and following researchers and their publications, endorsing the skills of others, Ability to comment or send feedback, Ability to share news items and updates easily and quickly.

Research Gate contains useful information about journals, such as impact factors, metrics and some details of open access policy – in this respect it is useful for bringing information together into one place.

LinkedIn- LinkedIn was founded in 2002; it is a social network for professionals. Researchers can follow the professionals working in their research domain and help in finding new opportunities to grow their careers and to connect with other professionals. Like

other social networks LinkedIn has also many features like endorsed by someone, share their articles, comments, recommends someone, participate in relevant groups, seek jobs, and allow to publish blogs posts which helps in increasing the credibility in related fields relevant to professional experiences.

Social Science Research Network (SSRN)- It was founded in 1994 by Social Science Electronic Publishing, Inc. It is the leading open access multi-disciplinary online repository of scholarly research in social sciences and humanities. In May 2016, SSRN was bought from Social Science Electronic Publishing Inc. by Elsevier.

Mendley is a free reference manager and scholarly collaborative network owned by Elsevier and launched in 2008. It is used for managing and sharing research papers, discovering research data and collaborating online.

Academia.edu-Academia.edu was launched in 2008. It is a social networking website for academics and researchers. It allow to share their research, monitor deep analytics around the impact of their research, and track the research of academics they follow.

3. Barriers for the Author name disambiguation

Author name disambiguation aims to find all publications that belong to a given author and distinguish them from publications of other authors who share the same name. Typical approach for author name disambiguation rely on information about the authors such as their affiliations, email addresses, year of publication, co-authors, topic information to distinguish between authors. This information can be used to train a machine learning classifier to decide whether two author mentions refer to the same author or not.¹¹ Listed below are the few barriers which are identified as the cause of Author name disambiguation:

- Inconsistent name formats caused by the authors themselves or editors
- Various transliteration systems, especially where different non-Roman alphabet names result in the same transliterated Roman alphabet name.
- Legal name changes
- Cultural variants in the position of surnames
- The sheer volume of scholarly materials
- Highly similar names sometimes even doing similar work at the same institution.
- The large number of common names, especially certain surnames in many cultures

4. Benefits of adopting Research Identifiers

It is important to know what the advantages are if a researcher adopts such identifier tools for their research activity. Listed are the benefits which are not limited to:

- Funding agencies face challenges of reliability identifying their researchers and monitoring outcomes over time.
- Universities and postdoctoral affairs offices also have challenges of collecting meaningful data about the outcomes of their students and trainees.
- Early career researchers also face the challenge of not having their work discovered and recognized because of name ambiguity problems: common, changed, or misspelled names.
- Improve discoverability-enabling the improved identification, data collection, and career outcome tracking of their students.

5. How to improve research impact

In order to raise or improve a research impact few of the steps given below which may raise the visibility of researcher publication of an author:

- a. always use the same name version consistently throughout your career.
- b. use a standardized institutional affiliation and address
- c. collaborate with researchers in other institutions
- d. deposit your publication (final draft or published paper) depending on copyright policy of publisher) in the Research Repository This has the added advantage of being able to automatically populate researcher publications listing via RSS etc.
- e. take advantage of SEO (search engine optimization) by carefully selecting title and keywords for your publication
- f. register to any Author Identifier platform to improve identifiability in databases
- g. present preliminary research findings at meetings and conferences
- h. create and join academic social networking sites, e.g. Academia.edu, Research Gate, and LinkedIn
- i. Utilize social bookmarking with Mendeley, Zotero or CiteULike
- j. Communicate information about your research projects through blog or academic social networking sites like Academia.edu, ResearchGate, and LinkedIn

6. Conclusion

Librarians view institutional repositories as a way of aggregating, archiving, preserving the institution's output and giving those outputs visibility. The repositories include preprints or post prints of articles, papers, technical reports, dissertations and theses, data sets, teaching materials, digitized special collections, and other materials related to the institution's work. The unique materials in special collections were previously hidden from scholars and researchers before being digitized and available through repositories. Institutional repositories pose no threat when they are used as a store for gray literature and access to them was confined to intranets. Librarians can assign persistent identifiers to authors at point of submission if don't already have one while submitting electronic dissertations in institutional repositories, Papers, datasets to research websites or articles to journal aggregators or they can encourage researcher to Obtain identifier before submitting any output. By this a Library can play a significant role in promoting an awareness program on these available tools and platforms among users in their Institution and organization to emphasis and encourage research driven environment. A special service may also designed integrating with Institutional and data repositories services.

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