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A Metadata Framework for Researcher Profile Systems

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Abstract

Researchers increasingly maintain profile data across ORCID, ResearchGate, Google Scholar, and institutional research information management systems. Because these platforms use inconsistent metadata fields, naming conventions, and update practices, researchers face duplicated maintenance work and profile data can become fragmented across systems. This paper discusses the need for a cross-platform researcher profile metadata framework grounded in persistent identifiers, metadata standardization, and FAIR principles. The framework aims to reduce profile maintenance costs while improving identity verification, attribution of research outputs, academic dissemination, and data reuse.

1. Extended Abstract

Currently, researchers interact with multiple researcher profile systems, including ORCID, ResearchGate, Google Scholar, and institutional systems such as RIMS. The data in these researcher profile systems must include metadata such as name, affiliation, title, research field, publications, datasets, research projects, and citations. However, the metadata fields, naming conventions, and update methods required by each platform are inconsistent. Consequently, researchers must repeatedly enter the same data and also correct errors, fill in gaps, and maintain synchronization across different platforms. Maintaining the timeliness and accuracy of personal profiles across all academic social platforms is extremely time-consuming [1] another study indicates that when researchers are not required by their institutions to create a public RIMS profile, their willingness to participate depends on whether the benefits outweigh the time and maintenance costs. This study cited "avoiding high maintenance costs" and "lack of time for maintenance" as reasons for not creating a public RIMS profile, suggesting that to promote researchers' adoption of non-mandatory RIMS, the costs associated with creating and maintaining profiles must be reduced [2].

In addition to the costs of maintaining researcher profile systems, data inconsistencies also impact academic dissemination and data reuse. If a single researcher is split into multiple identities across different databases due to name variations, name changes, institutional transfers, lack of disambiguation, or the absence of identifiers such as ORCID, the attribution of publications and datasets, citation counts, and institutional links may all be distorted. For example, while Scholix and Scholexplorer can establish cross-system links between articles and datasets, because some records lack author names or institutional affiliation information, and researcher identifiers such as ORCID have not yet been fully integrated, relying solely on name matching makes it difficult to automatically and accurately determine the relationship between the authors of articles and datasets. This is particularly detrimental to distinguishing between the production of original data and the reuse of secondary data [3].

Poster

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An effective researcher profile framework must address at least two key tasks. First is identity verification. Haak et al. [4] point out that the core of ORCID lies in providing researchers with a permanent and unique identifier, and by applying this identifier to submissions, publications, datasets, and other outputs, it supports cross-system linking of researcher identities and attribution of research outputs. Therefore, persistent identifiers such as ORCID can be regarded as a crucial foundation for cross-platform data integration and the linking of research outputs. Second is metadata standardization. The FAIR principles outline four core requirements for data management and preservation: Findable, Accessible, Interoperable, and Reusable—meaning data should be searchable, accessible, interoperable with other data or systems, and reusable [5].

Currently, no single platform covers all researchers within a specific discipline, nor does any platform provide the best data across different dimensions of impact, such as citations, usage, and community connections; therefore, a cross-platform approach is necessary to fully present a researcher's profile data [6]. Consequently, this study aims to organize the metadata of researcher profile systems into a framework to reduce the cost of maintaining these systems for researchers and enhance the potential for data reuse, thereby making the data easier to reuse.

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