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The Topical Diversity of Research Articles in Hydrology is increasing

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Introduction

The initial focus of hydrology and water resources science was on bringing together social scientists, engineers, and natural scientists. The separation between the physical and social sciences in water research was recognized, and the journal Water Resources Research encouraged then-limited partnerships to encourage this mix. Multidisciplinary hydrological research is required to comprehend (and predict) the entire global water cycle, according to a report by that stressed the significance of a diverse hydrology education base. New research areas like hydroclimatology, hydrometeorology, geobiology, hydroecology, hydrogeomorphology, ecogeomorphology, and earth system dynamics, among others, centered on hydrologic sciences over the following ten years [1].

Description

In the modern era, it was argued that the Scientific Decade 2013–2022 would focus on cutting-edge methods for monitoring and data analysis, and that establishing connections between economic and geoscientific fields could lead to diversity in water science. Later made the argument that this branching of subtopics in hydrologic sciences has led to a thriving interdisciplinary research culture that focuses on interactions between water, earth, and biological systems at a variety of spatial and temporal scales. According to Ruddell and Wagener, hydrology education needs to go beyond its traditional boundaries in order to meet the ever-changing and distinctive requirements of society (such as developing an international faculty learning community based on data and modeling, hydro-economics, etc.).

Vogel and co. described a contemporary branch of hydrologic science that aims to improve comprehension of the connections between humans and nature. He argued that in order to properly account for natural nonstationarity, every theoretical hydrologic model previously presented must be revised; proposing to comprehend the coupled human-hydrologic system by means of knowledge discovery via "Big Data." It has been argued that modern data science has the potential to transform water science given a concerted effort to bring together hydrologists with data scientists, computer scientists, and statisticians. This demand for more robust, diverse hydrologic models that account for the nonstationarity that is associated with climate change and leverage large samples of available data increased dramatically in the 21st century [2].

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It is essential for researchers and practitioners to know whether and how the water science and hydrology science community is changing, regardless of how we view the discipline's open challenges. We quantify and identify trends and interactions within and between various subtopics of the discipline in this research. In particular, we use these analyses to provide some insight into the state of topic diversity in the field by measuring trends and diversity of various subtopics within the discipline. Water quality, groundwater, streamflow, climate change, eco-hydrology, biogeochemistry, and other topics are all covered in water research articles. all of which have an impact on the socioeconomic well-being of the world. Their corpus contained article titles from only one journal and utilized pre-identified keywords and topics, making their attempt to assess interdisciplinarity in hydrology futile. Data science methods are used to help (partially) automate the process of identifying distinct sub-topics in the field in this paper, which examines a wide range of water science and hydrology research publications (our corpus includes 18 high-impact journals) [3].

The growing amount of peer-reviewed literature that quantifies this phenomenon in hydrology and water science is one of the major obstacles that all scientific communities must overcome. Computational linguistics, machine learning, and various application-ready Natural Language Processing (NLP) toolboxes have made it easier to analyze large electronic corpora for a variety of purposes. Since the 1990s, these machine learning-based text mining, information retrieval, and text categorization methods have become increasingly popular in information systems [4,5].

Conclusion

A subset of natural language processing (NLP) known as topic modeling makes use of statistical algorithms to extract semantic information in the form of thematic classes from a collection of texts. Topic models have been used to recommend scientific articles based on content and user ratings and can be applied to huge collections of documents. The statistical modeling of biomedical corpora, the bibliometric exploration of hydropower research, the analysis of research trends in personal information privacy, the development of meta-review in cloud computing literature, the literature review of social science articles, the discovery of themes and trends in transportation research, the identification of authors' contributions to knowledge management literature, the exploration of topic divergence and similarities in scientific conferences, and a variety of application-specific objectives are all examples of applications in which topic modeling has been utilized. Unsupervised dynamic topic modeling has the advantage of automatically identifying distinct sets of vocabularies, or topics. However, it is essential to keep in mind that any results from an analysis of topic model outputs are related to the words that define the topics. We anticipate that topic modeling will continue to be helpful in tracing the development of the hydrological sciences as more topics within our field emerge as a result of new knowledge, expanding collaborations, and favorable policies.

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Conflict of Interest

None.

References

1. Lu, Yue, Qiaozhu Mei and ChengXiang Zhai. "Investigating task performance of probabilistic topic models: an empirical study of PLSA and LDA." *Inf Retr* 14 (2011): 178-203.
2. Bromham, Lindell, Russell Dinnage and Xia Hua. "Interdisciplinary research has consistently lower funding success." *Nature* 534 (2016): 684-687.
3. Choi, Hyo Shin, Won Sang Lee and So Young Sohn. "Analyzing research trends in personal information privacy using topic modeling." *Comput Secur* 67 (2017): 244-253.
4. Gudmundsson, Lukas, Julien Boulange, Hong X. Do and Simon N. Gosling, et al. "Globally observed trends in mean and extreme river flow attributed to climate change." *Science* 371 (2021): 1159-1162.
5. Harshbarger, J. W and D. D. Evans. "Educational progress in water resources present and future." *J Am Water Resour Assoc* 3 (1967): 29-44.

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