Computational methods in Communication.
Presentation

Métodos computacionales en Comunicación. Presentación

Métodos computacionais em comunicação. Apresentação

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Abstract

The recent increase in data, tools, and processing power available digitally is encouraging the use of computational methods for the study of communication and in the Social Sciences, in general. A phenomenon that open new lines of research and a practical application. For example the understanding of social aspects in current digital contexts; the identification of factors that affect the occurrence of such events; the application of communication strategies, in the study of new meanings of citizen exercise and consumption of users from current digital scenarios; and in the use of new methodologies that until recently were alien to the field of Social and Humanistic Sciences. This special issue attempts to address the central issue of this issue, from some perspectives established by the authors that are part of this issue, in order to contribute to an overview of more relevant approaches and perspectives of applicability of these types of methods to Communication level today.

Key Words: Computational methods; Communication; Big Data; Artificial intelligence; Social Networks

Resumen

El reciente aumento en los datos, herramientas y poder de procesamiento disponibles digitalmente está fomentando el uso de métodos computacionales para el estudio de la comunicación y en las Ciencias Sociales, en general. Un fenómeno que está abriendo nuevas líneas de investigación y aplicación práctica para la comprensión de fenómenos sociales en los contextos digitales actuales; así como en la identificación de factores que inciden en la ocurrencia de dichos eventos, en la aplicación de estrategias de comunicación, en el estudio de nuevos contextos de ejercicio ciudadano y de consumo de los usuarios desde los escenarios digitales actuales, y en la aplicación de nuevas metodologías que hasta no hace mucho eran ajenas al campo de las Ciencias Sociales y Humanísticas. El presente número intenta abordar el tema central de este número, desde algunas perspectivas presentadas por los autores que hacen parte de este número, con el fin de contribuir a tener una visión general de enfoques y perspectivas más relevantes de aplicabilidad de este tipo de métodos a nivel de la comunicación en la actualidad.
Palabras clave: Métodos computacionales; Comunicación; Big Data; Inteligencia artificial; Redes sociales

Resumo

O recente aumento de dados, ferramentas e poder de processamento disponível digitalmente está estimulando o uso de métodos computacionais para o estudo da comunicação e nas Ciências Sociais, em geral. Um fenômeno que está abrindo novas linhas de pesquisa e aplicação prática para a compreensão dos fenômenos sociais nos atuais contextos digitais; bem como identificar fatores que influenciam a ocorrência de tais eventos, na implementação de estratégias de comunicação, o estudo de novos contextos de exercício cidadão e consumo de usuário dos cenários digitais atuais e na implementação novas metodologias que até recentemente eram estranhas ao campo das Ciências Humanas e Sociais. Esta edição convida pesquisadores de todas as áreas do conhecimento a apresentarem propostas acadêmicas que dêem relevância especial ao uso e aplicação de métodos computacionais em torno de temas relacionados à comunicação, tanto no nível da pesquisa quanto na sua aplicação à análise e ao uso do usuário. Suas aplicações para diferentes áreas de marketing, design digital de produtos, comunicação política, entre outros. Tudo isso com o propósito de que o presente número contribua para ter uma visão geral de abordagens e perspectivas mais relevantes para a aplicabilidade deste tipo de métodos no nível da comunicação atual.

Palavras chave: Métodos computacionales; Comunicación; Big Data; Inteligência artificial; Redes sociales

Presentation

The rise of new tools for communication and access to data through the internet and current digital media have brought in recent years a complete revolution of indicators and methods aimed at the study of the different processes and socio-communicative phenomena carried out in them. What a challenge means, not only at the level of traditional media, who have before them the task of adapting their influence and communication strategies, given the rise of social networks,
for example; but also, to the current and future generation of professionals and researchers interested in acting and analyzing the current digital ecosystem, from the multiple perspectives generated at the level of different fields of knowledge.

Part of the complexity that the current digital scenario has brought with it has been a consequence of the emergence of new paradigms of interaction and organization among people, which have generated new practices in daily life, in all the referents of contemporary societies. A phenomenon in which more and more science and computational methods are becoming fundamental for the automatic collection and understanding of large volumes of data, generated from the current digital ecosystem. Something that is not without problems, such as those related to the lagged effect on data extraction and analysis (Ye & Abbe, 2018); in the identification of indicators that help to measure and understand phenomena from these digital contexts (Casero-Ripollés, 2018); and in the construction of ethical principles required for the development of professional and research actions, which adapted to the paradigm above shift (Suárez, 2015).

From the areas of knowledge related to Computational Sciences, Artificial Intelligence (AI) and Big Data have become two of the primary references because of the possibilities that they can bring with them to different professional, academic and social sectors. Since the mid-1990s, in the case of AI, with the rise of Markov models, intelligent agents, and other techniques that have allowed inclusion in a more significant number of everyday contexts. Something that has not been exempt from debate about how a conceptual approach to AI has established, as well as the ability of machines to act like people (Russell & Norvig, 2004; Torra, 2011), or from a notion more focused on the capacity of the machines to be able to carry out processes in a rational way (Charniak & McDermott, 1985; Nilsson, 1998). Nevertheless, beyond the approaches in which the AI debate has revolved, there seems to be a standard agreement on the potential contributions it makes to problem-solving, the way knowledge represented and the systems based on it., and the potential benefits that machine learning has brought (Torra, 2011).

In the case of Big Data, there seems to be agreement when pointing out the growing importance that it has acquired since the 1990s, with the emergence of
technology companies and the evolution that we have witnessed at the level of web storage capacity. A concept that has not been exempt from the debate, at the time of being understood. Either as a system that can control and master vast amounts of data (1,000,000,000,000,000 bytes or more), through different analysis techniques (e.g., data mining or text mining) or as a way of referring to a large amount of data, which require new forms for processing and that allow to obtain a better knowledge, decision making and process automation, around a specific subject (Serrano-Cobos, 2013; Gardner, n.d)

Regardless of the concepts mentioned so far, from the point of communication and Social Sciences, especially in recent years, it has not been separated from the diatribes, complexities, and challenges involved in computational methods, especially everything that has to do AI and Big Data, and the possibilities they bring to the understanding of socio-communicative processes carried out from the internet and digital scenarios.

In order to contribute to the above, it is that the present number reflects on the possibilities offered by computational methods at the level of communication, through the exhibition of a total of five papers that focus their gaze from different perspectives and scopes, which help to capture the central theme of this number, at the level of Social Sciences and communications.

The first work, entitled "Computational and ethical journalism: Analysis of the ethical codes of Latin America," by Jesús Díaz-Campo and María-Ángeles Chaparro-Domínguez, has as main objective to determine the relevance of the codes of ethics, present in the journalism, at the time of carrying out or putting into action what is known as computational journalism, that is, journalism that uses habitual methods, within the Social Sciences, to address issues of public interest (Coddington, 2015). Throughout this work, a general review made around the different denominations of computational journalism, as well as the ethical challenges inherent in this type of professional exercise. Topic that focuses particular attention at the level of Latin America, as a result of the set of specificities that this region has (Villanueva, 2002; Barroso, 2011), and whose most relevant conclusions help to see how the computational adaptation of the journalistic exer-
cise in Latin America, does not depend on the age of the ethical codes present in each country. As well as the value of classic ethical principles of journalism has, under the new modalities and specialties generated with the rise of the internet and current digital scenarios.

The second work, entitled "Influence of media on the political conversation on Twitter: Activity, popularity, and authority in the digital debate in Spain", by Andreu Casero-Ripollés, makes a practical approach, focused on understanding the most influential messages of the political debate, published in social networks, carried out in Spain. This, based on a sample of 127.3 million tweets published on Twitter, and the use of Big Data, machine learning and social network analysis. An analysis that helps to see, while recognizing the possibilities offered by computational methods, in addressing issues such as those proposed here, the features that influence the more significant influence of certain types of messages published in the Spanish political debate. It contributes to giving relevance to the role that the current digital scenarios are fulfilling (in this case, Twitter), in the ecosystem of media available in this country.

The third work, entitled "Artificial Intelligence: theoretical, formative and communicative challenges of datification," by Víctor Lope Salvador, Xhevrie Mamaqi and Javier Vidal Bordes, not only contribute to reaffirm the paradigm shift exposed at the beginning of this paper but also recognizes the opportunities that computational methods can provide to the process of theoretical and methodological innovation at the level of Social Sciences and Humanities. Something that does from the perspective of scientific revolution proposed by Kuhn (1996), and the process of adaptation to which we are currently involved, before the realities that are wanted to know, from the digital scenarios present today in the daily work of our societies. A reflection that makes three strategic aspects that, as the authors indicate, need to be taken care of: the updating of the digital skills that must be put in place for data analysis, under the digital and massive data context (1); the rise of AI as a conceptual reference for the development of new epistemological frameworks at the level of Social Sciences and Humanities (2); and the need to implement academic actions that ensure the implementation of computational procedures that help assess quality and innovation (3). Aspects that, from the
exposition by these authors, will help to reduce the lagged effect that today seems to exist at the level of the areas of knowledge from which the reflection made on AI and its potential academic achievement start.

The fourth work, entitled "Call into the platform! Merging platform grammaticalization and practical knowledge to study digital networks", by Janna Joceli Cavalcanti de Omena and António Granado, assumes a practical approach, through image analysis and data mining, to analyze the use that universities in Portugal have been making of Facebook APIs. It will help to visualize patterns of use of digital scenarios such as those mentioned above, from Portuguese academic institutions, whose presence in this type of context is recent (15 years or less), without focusing on scientific communication. Those mentioned above are interesting, being a way of visualizing, from the institutional point of view and at the academic level, the gaps that are still present in terms of use and social and scientific use of the digital ecosystem currently available.

The fifth and final work, entitled "Analysis of academic production networks on television programming", by Alicia Moreno, Julio Montero, and Rafael Repiso analyzes the academic evolution that television production has had, from scientific production published and indexed in Web of Science. A work that is also interesting to observe, as a case study of the use of computational methods (in this case network analysis) and its application at the bibliometric level for the study of the issue raised in it.

The set of papers presented in this special issue are only examples of the diversity of approaches that, from the Social Sciences and Humanities, can be addressed, applying or taking into account current computational methods. What makes it easy to recognize the scope that is today around the analysis of networks, artificial intelligence, and Big Data, for example; but also the diversity of approaches and scope available, from the variety of socio-communicative issues that occur and are of study interest, at the level of the internet and current digital scenarios.
References


**Notes**

[1] Its origins date back to the end of 1950, under the approaches of Turing (1950), around the possibility that machines could think.

[2] The objective of the model is to determine the unknown parameters. From the 1980s this model began to be applied in the analysis of biological sequences and in the field of bioinformatics.

[3] According to authors such as Hendler (1999), they can be understood as programs that serve to perceive their environment, process perceptions and respond correctly to the expected results.

[4] Although his first express mention made by Bryson et al. (1999), there are authors like Press (2013) or Niño (2015), who estimate the first milestones of this concept during the first half of 1940 and at the end of 1950, respectively.

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