

Algorithmic literacy: opportunities, risks and challenges

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Professor Vázquez Barrio is Principal Investigator of the national R&D&I project entitled, "Knowledge, attitudes, and opinions of the Spanish population regarding internet algorithms and the design of discriminating algorithmic literacy, or AlgorLit" (PID2022-140183OB-100). Professor Vázquez Barrio also serves as PI for the Consolidated Research Group known as ThinkOnMedia, in addition to being in charge of the Laboratory of Neurotechnology Applied to Communication (NeuroLabCom).

Since 2004, she has been continuously involved in competitive research projects, having served as principal investigator on three endeavors, two of which were under the auspices of the National R&D&I Plan. Her research focuses on the use of Internet and social media by young people and adolescents, regarding both risks and opportunities, with a special focus on media and algorithmic literacy, as well as digital vulnerability. Regarding publication, her work has appeared both in scientific journals and in the archives of distinguished publishers. Professor Vázquez Barrios also serves as coordinator of the Doctoral Programme in Social Communication at CEU International Doctoral School (CEINDO).



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Professor Sánchez Valle is head of the Laboratory of Neurotechnology Applied to Communication (NeuroLabCom), as well as the Principal Investigator of the national R&D&I project entitled, "Knowledge, attitudes, and opinions of the Spanish population regarding internet algorithms and the design of discriminating, algorithmic literacy programmes, or AlgorLit" (PID2022-140183OB-100). Throughout her career, she has been involved in 17 competitive projects, serving as principal investigator on three of them. Her research focuses mainly on exploring digital communication among vulnerable groups, such as children, youth, people with disabilities, and seniors, the aim of which is to promote media literacy programmes.

The professor's work has been honored through the conferment of three six-year research grants from the National Commission for Assessment of Research Activity (CNEAI). The findings of her studies have been widely disseminated in prestigious national and international conferences, indexed book chapters, and articles published in high-impact scientific journals.

Su labor investigadora ha sido reconocida con tres sexenios de investigación por parte de la CNEAI. Los resultados de sus estudios se han difundido ampliamente en congresos nacionales e internacionales de referencia, así como en capítulos de libros indexados y en artículos publicados en revistas científicas de impacto.



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Professor Tomé carries out several academic and professional roles, including the following: lecturer at the Autonomous University of Lisbon; visiting researcher at CIES-ISCTE in the Lisbon University Institute; journalist by profession (CP1524); international consultant (Council of Europe and European Commission); and instructor of trainers (CENJOR), the last of which involves both professors (National Teachers' Association) and journalists (CENJOR).

He is currently involved in numerous international projects focused on education for digital citizenship, media literacy, practical knowledge to understand artificial intelligence, and information veracity. These undertakings are funded by institutions such as the Council of Europe, the European Commission, and the Calouste Gulbenkian Foundation. Notable examples of these initiatives include RESIST, TAMeLi, FAMA, CivicHype EU, and IBERIFIER Plus. Professor Tomé coordinates other projects as well, including Media Information Literacy – Community Connections, ALGOWATCH, and MELISE, which focus on combating disinformation and enhancing the level at which people in democratic societies are informed.

Description

The contemporary digital ecosystem is profoundly influenced by algorithmic systems that organise people's access to information, structure the visibility of content, and mediate multiple areas of social, cultural, economic, and political life. Algorithms now play a key role in operations as distinct as news distribution, content recommendation, information mediation, digital advertising, and automated decision-making in public and private institutions.

However, this new scenario poses significant challenges. Understanding how algorithmic systems operate and shape our lives has become a critical issue. Given the situation, the concept of algorithmic literacy has become a key tool for the discerning interpretation of the digital environment, and for strengthening the competence of citizens in an increasingly automated and obscure media context.

Like other periods of media transformation, the current changes taking place cannot be completely understood unless they are analysed from a broad perspective, which means taking into account technological, communicative, social, and educational aspects. Algorithmic literacy cannot be confined merely to the technical understanding of automated systems. Instead, skills aimed at discernment must be developed in order to interpret how these systems work, evaluate their social implications, and understand the dynamics of power that comprise the heart of the digital ecosystem. Thus, algorithmic literacy lies at the crossroads of communication studies, media education, digital culture, technological policy, and democratic citizenship.

The purpose of this special issue is to gather contributions from scholars who work at universities and research institutions in various countries, the aim of which is to explore algorithmic literacy from a cross-cutting viewpoint. The objectives are two-fold: firstly, to promote dialogue between diverse theoretical and methodological approaches in order to provide enhanced understanding of the role of algorithms in shaping the contemporary communication ecosystem; secondly, to analyse the skills people need for the purpose of interpreting these systems with discernment.

This monograph also aims to identify new lines of research in the field of algorithmic literacy, examine its presence in educational programmes, and explore initiatives designed to foster discriminating, digital citizenship that is aware of the role played by algorithms in the organisation and dissemination of information and other content.

The academic community is encouraged to submit papers that explore the study of algorithmic literacy from various perspectives, including theoretical approaches, empirical research, comparative studies, public policy analysis, pedagogical proposals, and knowledge-transfer initiatives.

Thematic areas

- Conceptualisation and theoretical development of algorithmic literacy.
- Algorithms, disinformation, media polarisation, and information quality
- Algorithmic biases, transparency, governance, and the regulation of digital platforms.
- Algorithmic literacy in education: innovative teaching, pedagogical practices, and knowledge transfer.
- Algorithmic literacy and political communication: democratic proceedings, public opinion, and governance.
- Algorithmic literacy for vulnerable groups: children, teens, seniors, and people with disabilities.
- Algorithmic literacy for responsible consumers: purchase experiences mediated by recommendation systems, personalisation, and content prioritisation.

Keywords

Algorithmic literacy, algorithms, disinformation, vulnerable groups, digital citizenship, responsible consumers

Basic style guidelines



- Manuscripts must be between 5,000 and 10,000 words in length. They must be submitted in Word format (.doc/.docx), using Times New Roman font, size 12, single spacing, and standard margins.
- They must contain, in Spanish and English, a title, abstract (between 150 and 200 words), and 5 keywords. Each author must provide their full name, email address, ORCID code, and a brief CV of approximately 100 words.
- The content should be structured like a scientific article: introduction, methodology, results, and conclusions.
- Headings should be numbered using Arabic numerals following the standard structure 1., 1.1, 1.1.1, etc.
- Tables and/or figures should be numbered using Arabic numerals from 1 to infinity, indicating the source and authorship.
- Citations should be included in the text using Harvard style (e.g., Bauman, 2010: 126), not in footnotes.
- The bibliography section should only include works cited in the paper, which should be mostly current and presented in APA format, indicating the DOI when available.



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