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*Postgraduate student H. Svitenko,
Scientific Supervisor – Doctor of Technical Sciences,
Professor Yu. Romanenkov
Kharkiv National University of Radio Electronics*

APPROACHES TO DETECTING BIAS AND MISINFORMATION IN THE CONTENT STREAM

In the contemporary digital age, the Internet has become a dominant platform for the access and dissemination of information. While it offers rapid access to knowledge, it also facilitates the spread of unreliable and biased content. The massive volume of available data and the ease of publication have raised concerns about the reliability and objectivity of online information.

The Internet, particularly through news portals, social networks, and platforms such as YouTube, has become a primary source of news and information for a significant proportion of the population. While the internet offers users the ability to access a vast array of perspectives in a relatively short period of time, it is also being increasingly exploited for the dissemination of misinformation, fraudulent data, and political propaganda. Information can be distorted by both malevolent actors with self-serving motives and by ordinary users who spread inaccurate data from unverified sources unknowingly. The dissemination of misinformation has the potential to impact social, political, and economic stability. The detection of fake news remains a challenging issue due to its resemblance to truthful content, which makes it difficult to verify its accuracy.

This report delves into the reliability and objectivity of information available on the internet by analyzing several academic studies that use various theoretical and practical approaches. The review enables the

identification of key methods for distinguishing between reliable, impartial information and misleading or manipulated data.

In the paper "The Analysis of Reliability and Objectivity of Information That Can Be Found on the Internet" [1], the authors put forth an application of Shannon's law of entropy, a concept from information theory that measures unpredictability or disorder, to assess the growing issue of "information chaos". The resulting chaos is the consequence of the considerable quantity of disorganized and frequently unreliable data that is disseminated in digital environments. The article addresses the challenge of distinguishing between authentic, factual information and data that is biased, false, or otherwise manipulated. In the article, a graphical model is introduced as a means of visually depicting the manner in which unreliable information spreads across the internet.

Another article [2] employs a quantitative approach, developing a classification system for the detection of bias in online news media. This study employs entropy as a metric to gauge the consistency and predictability of information in news reporting. By analyzing how biased media presents information in patterns that deviate from objective reporting, the researchers were able to quantify the degree of bias and propose a system for evaluating the reliability of news content systematically.

In the study [3], the authors examine information disorder, classifying it into three categories: misinformation (false information spread without harmful intent), disinformation (deliberate falsehoods to manipulate for gain), and malinformation (accurate data used harmfully). The paper investigates the role of social media in amplifying false information, examining its potential impact on political processes and outcomes, including instances of electoral manipulation. To address this issue, the authors propose strategies such as enhancing media literacy, increasing social media transparency, and implementing fact-checking and regulatory frameworks.

The article, "Fake news, disinformation and misinformation in social media: a review" [4], examines the phenomenon of fake news, defined as fabricated stories intended to deceive for financial or political gain. The article discusses how social media algorithms and the viral nature of content facilitate the spread of falsehoods and examines psychological factors, such as confirmation bias and cognitive overload, that make users more vulnerable. Solutions proposed include algorithmic adjustments, media literacy programs, and collaboration with fact-checkers to limit the reach of fake news.

The theoretical approaches presented in articles [1] and [2] demonstrate promising methods for the systematic evaluation and quantification of information reliability through the use of entropy and information

theory. These methods provide a basis for the development of automated tools and algorithms capable of detecting bias and disorganization in digital information systems.

In contrast to the preceding articles, which consider theoretical models, articles [3] and [4] turn to the real-world implications of misinformation, with a particular focus on the role of social media in amplifying false information. Article [3] emphasizes the importance of establishing regulatory frameworks and implementing educational initiatives. Article [4], in contrast, focuses on psychological factors, such as confirmation bias and cognitive overload. The two articles present practical solutions, such as fact-checking and algorithmic adjustments, which complement the theoretical models with a more comprehensive, multifaceted approach to addressing information disorder.

It can be concluded that a promising direction for future research would be a combination or complexification [5] of quantitative models of bias detection with practical user guidelines. This hybrid approach would not only help users identify reliable information, but also facilitate the automation of the detection of bias and misinformation on a larger scale. This would provide a comprehensive solution to the issue of online information reliability.

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