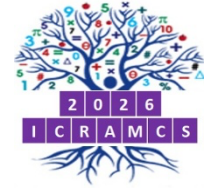


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Beyond Isolated Solutions: A Systematic Review and Proposed Hybrid

Communication Info

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Abstract

The proliferation of AI-driven disinformation creates a critical impasse where automated detection systems often struggle with complex contexts and algorithmic bias [5], while expert fact-checking remains unscalable against the "infodemic" volume [4]. Addressing this gap, this study synthesizes state-of-the-art literature to propose a novel Hybrid, Multi-Layered Framework that synergizes machine scalability with human nuance. Our proposed architecture integrates an operational "cascade model" to strategically route tasks between AI filters and human experts [3], alongside a multi-layered AI engine designed to analyze signal, perceptual, and semantic traces of generative content [2]. Furthermore, we incorporate technical methods like network and reputation analysis to identify complex manipulation patterns [8]. We conclude that this human-in-the-loop approach effectively mitigates challenges such as concept drift, outlining a research agenda for adapting these frameworks to diverse socio-linguistic environments.

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References

- [1] Choraś, M., Demestichas, K., Giełczyk, A., Herrero, Á., Ksieniewicz, P., Remoundou, K., Urda, D., & Woźniak, M. (2021). Advanced Machine Learning Techniques for Fake News (Online Disinformation) Detection: A Systematic Mapping Study. *Applied Soft Computing*, 101, 107050.
- [2] Xu, D., Fan, S., & Kankanhalli, M. (2023). Combating Misinformation in the Era of Generative AI Models. *In Proceedings of the 31st ACM International Conference on Multimedia (MM '23)*, 9291–9298.
- [3] Demartini, G., Mizzaro, S., & Spina, D. (2020). Human-in-the-loop Artificial Intelligence for Fighting Online Misinformation: Challenges and Opportunities. *Bulletin of the IEEE Computer Society Technical Committee on Data Engineering*, 43(3), 65–74.
- [4] Gradoń, K. T., Hołyst, J. A., Moy, W. R., Sienkiewicz, J., & Suchecki, K. (2021). Countering misinformation: A multidisciplinary approach. *Big Data & Society*, 8(1), 1–14.
- [5] Saeidnia, H. R., Hosseini, E., Lund, B. D., Tehrani, M. A., Zaker, S., & Molaei, S. (2025). Artificial intelligence in the battle against disinformation and misinformation: a systematic review of challenges and approaches. *Knowledge and Information Systems*.
- [6] Sarkar, S., & Ghosh, A. (2024). Leveraging Artificial Intelligence To Enhance Media Literacy And Combat Misinformation. *Journal of Novel Research and Innovative Development*, 2(9), a163-a187.
- [7] Bontridder, N., & Pouillet, Y. (2021). The role of artificial intelligence in disinformation. *Data & Policy*, 3, e32.
- [8] Shu, K., Wang, S., & Liu, H. (2017). Exploiting Tri-Relationship for Fake News Detection. *arXiv preprint arXiv:1712.07709*.