

Automatic Text Summarization Techniques and Methods

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Abstract: *In the field of natural language processing, there has been a noticeable rise in interest in autonomous text summarization in recent years. Text summarization's major goal is to offer a brief summary of a long text which contains crucial information so that viewers may quickly understand the document's key points without having to read every single thing. A comprehensive summary of the most recent developments in text summarizing methods is provided in this research article. We cover the many approaches to text summarization, such as extraction-based, abstraction-based, and hybrid approaches. Along with the datasets that are frequently used for training and testing, the study also discusses the numerous assessment criteria that are used to assess the efficacy of text summarizers. We also offer a thorough analysis of the most recent text summarization algorithms, including deep learning-based strategies like transformers and graph-based models. We also go over the difficulties and unsolved issues in text summarization, like how to produce concise summaries that accurately reflect the original content. Our examination of text summarization's potential applications are news articles, academic papers, and social media posts comes to a close. For researchers and practitioners interested in text summarization and its applications, we believe that this work will be a valuable resource.*

Keywords: Text Summarization

REFERENCES

- [1] Erkan, G., Radev, D. R. (2004). LexRank: Graph-based lexical centrality as salience in text summarization. *Journal of artificial intelligence research*, 22, 457-479. <https://www.jair.org/index.php/jair/article/view/10354>.
- [2] Nenkova, A., McKeown, K. (2011). Automatic summarization. *Foundations and Trends in Information Retrieval*, 5(2-3), 103-233. <https://doi.org/10.1561/1500000015>.
- [3] Conroy, J. M., Schlesinger, J. D., O'Leary, D. P. (2006). Text summarization via hidden Markov models. In *Proceedings of the 21st national conference on Artificial intelligence* (pp. 405-410). <https://doi.org/10.1609/aimag.v28i3.2106>.
- [4] Barrios, J. M., Cimiano, P., Go'mez-Pe'rez, A. (2016). Summarization through semantic analysis. In *Semantic Web-Based Information Systems* (pp. 131-159). Springer, Cham. <https://doi.org/10.1007/978-3-319-40295-6-5>.
- [5] Mihalcea, R., Tarau, P. (2004). TextRank: Bringing order into text. In *Proceedings of the 2004 conference on empirical methods in natural language processing* (pp. 404-411). <https://www.aclweb.org/anthology/W04-3252.pdf>.
- [6] Ganesan, K., Zhai, C., Han, J. (2010). Opinosis: A graph-based approach to abstractive summarization of highly redundant opinions. In *Proceedings of the 23rd international conference on computational linguistics* (pp. 340-348). <https://www.aclweb.org/anthology/C10-1055.pdf>.
- [7] Zhang, R., Wang, Y. (2016). Text summarization based on sentence clustering. In *2016 IEEE International Conference on Computer and Information Technology (CIT)* (pp. 188-193). <https://doi.org/10.1109/CIT.2016.30>.
- [8] Conroy, J. M., O'Leary, D. P. (2001). Text summarization via sentence extraction. In *Proceedings of the 2001 conference on empirical methods in natural language processing* (pp. 26-33). <https://www.aclweb.org/anthology/P01-1020.pdf>.
- [9] Dasgupta, A., Ng, V. (2007). A survey of text summarization techniques. In *Mining text data* (pp. 43-76). Springer, Boston, MA. <https://doi.org/10.1007/978-0-387-71261-7>.

[10] Dasgupta, A., Ng, V. (2007). A survey of text summarization techniques. In Mining text data (pp. 43-76). Springer, Boston, MA. <https://doi.org/10.1007/978-0-387-71261-7>.