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Assessment of Turnitin and Urkund in Identifying Plagiarised Content

Dr.Asha N
Associate Professor, Department of Computer Science,
Nrupathunga University, Bangalore, India
ashan.nub@gmail.com
https://orcid.org....
Dr.Sharada Devi J N
Associate Professor, Department of Zoology & Genetics,
Nrupathunga University, Bangalore, India
sharada.gfgc@gmail.com
https://orcid.org....

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Abstract: To preserve academic integrity in educational and research organisations, plagiarism detection methods are essential. Turnitin and URKUND (formerly known as Ouriginal) are two of the most popular systems. These two technologies are compared with respect to database coverage, detection processes, accuracy, reporting style, and usability. The identical document that was submitted to both systems is used in a case study, and the similarity reports that are produced are examined.The results show that URKUND delivers more precise analysis with fewer false positives, whereas Turnitin offers more academic capabilities and wider database coverage. The study concludes that both tools have strengths and limitations, discussion of algorithms that promote greater similarity report and recommending to hybrid the features of Turnitin and Urkund to have a better plagarisim tool.

Keywords: Plagiarism Detection, Turnitin, URKUND, Academic Integrity, Database coverage, Reporting style.

I. INTRODUCTION

In both teaching and research, academic integrity is crucial. The proliferation of digital content has made plagiarism a serious issue. Academic document similarities are frequently found using tools like Turnitin and Urkund. While Urkund focuses on analytical reporting and institutional-level detection, Turnitin is well known for its extensive database and similarity scoring algorithm. This study examines several plagiarism detection programs to understand their benefits and drawbacks. Understanding the advantages and disadvantages that are crucial for organisations or the procurement authority (such as INFLIBNET in the case of India) is the author's goal. As a result, the study compared Turnitin, Urkund (now Ouriginal), and DrillBit in three stages[1].The article discusses many types of plagiarism, including direct copying, mosaic, and self-plagiarism, and offers advice on how to prevent them in academic writing. It assesses plagiarism detection systems, emphasising that although they increase productivity, their accuracy is limited and careful, professional interpretation is necessary instead of depending just on automatic similarity ratings [2]. Turnitin had the highest mean similarity detection, followed by iThenticate and Ouroriginal, according to the average values. Researchers can avoid plagiarism and verify the effectiveness of anti-plagiarism techniques by evaluating the similarity index [3]. Among the different anti-plagiarism programs, Turnitin has gained popularity because of its ability to keep uploaded content automatically, expanding its database and making it more feasible for researchers. This report also makes some recommendations to improve its usability [4].The frequency of plagiarism could not be considerably decreased in the presence of multiple professional and unpaid plagiarism detection systems due to a number of variables, such as inadequate research and citation abilities, language problems, underdeveloped academic skills, etc. This work may provide instructors, researchers, and students with enough feedback to help them distinguish between plagiarism and similarity index [5].

II. EVOLUTION OF PLAGIARISM TOOLS

The founders of Turnitin, John Barrie and Chris Caren, worked on a project at UC Berkeley in 1997 to find similarities in student research papers. This led to the intensive development of a software tool to identify academic papers against online sources. Before it was renamed Turnitin, it was known as "FindSame". Schools, colleges, and universities adopted it. Developed a sizable database of student research papers, integrated it with learning management systems, and added similarity reports.

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Between 2010 and 2020, the program was updated with sophisticated features including GradeMark, PeerMark, and instructor feedback tools, as well as improved algorithms to anticipate paraphrasing and incorrect citations. AI has a huge impact starting in 2020, and Turnitin has embraced this by releasing AI writing tools that uses machine learning algorithms [6]. This program was created in 1999 by Urkund's inventors, Stefan Axelsson and Johan Hæpe, to help universities identify plagiarism and maintain academic integrity. Early development assisted students with email submissions and contrasted published information, online sources, and student submission reports. In order to interact with learning management systems like Moodle and Blackboard, the tool was adopted and expanded. Future iterations of Urkund were combined with Plagscan, which was marketed as Ouriginal and featured improved database expansion, an intuitive user interface, and automatic system analysis [7].

III. METHODOLOGY

To detect plagiarism, Urkund and Turnitin were given the same file with the same content. The Framework, as illustrated in Fig 1, discusses the procedures for detecting plagiarism utilizing both plagiarism detection programs. Both of the plagiarism tools also produce a similarity report. In addition to comparing authors' similarity reports, a number of research articles are examined in terms of database coverage, similarity index, accuracy, cost, features, and ease of use.

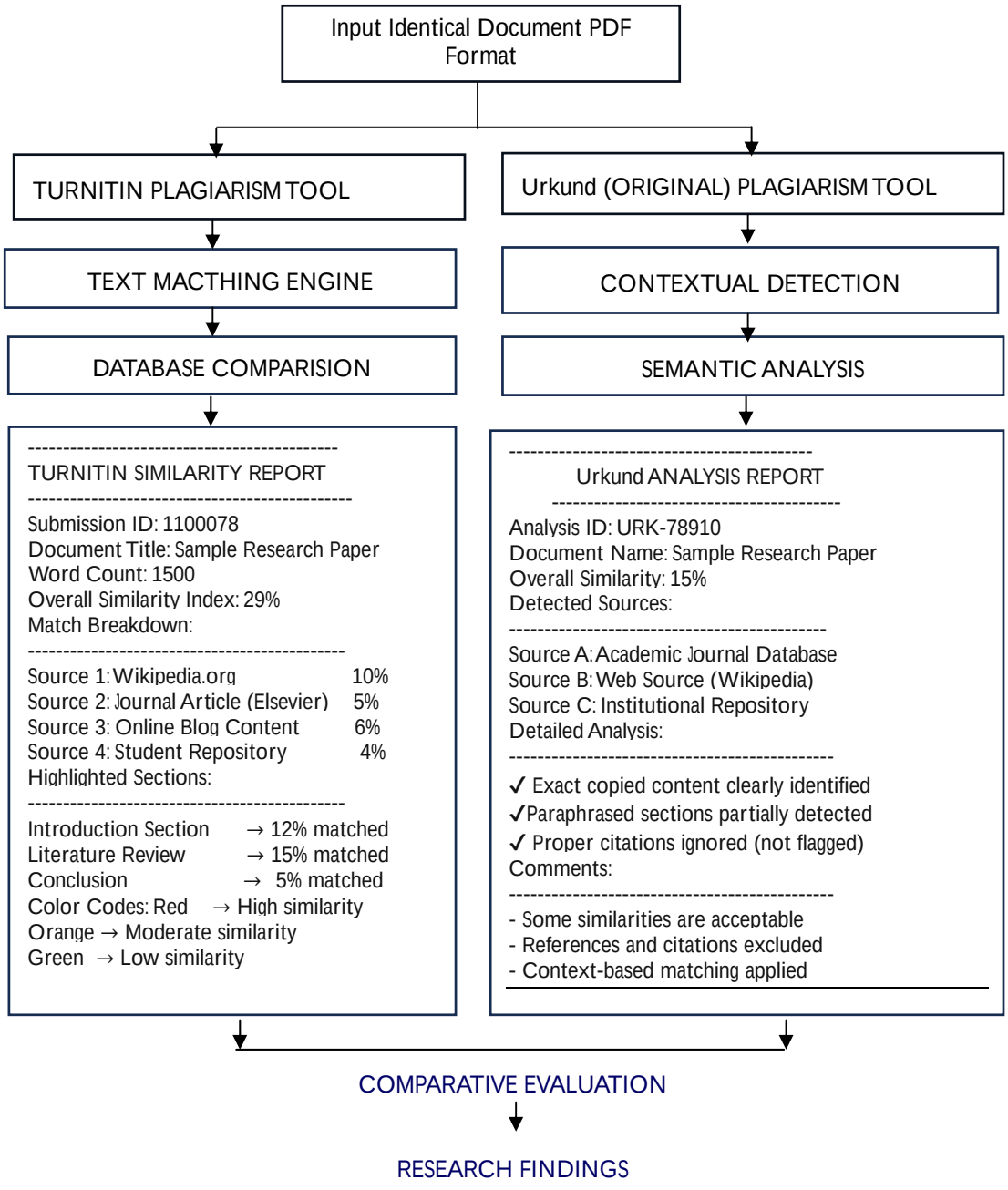

Fig 1. Framework to detect plagiarism using Turnitin and Urkund Tools

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IV. COMPARATIVE EVALUATION

Table 1: The similarity report of Turnitin and Urkund assessed based on the study

Parameters	Turnitin	Ouriginal (Urkund)
Detection Accuracy	1. Higher detection for online sources. 2. Excellent at recognising: • Direct plagiarism by copying and pasting. • Detection accuracy: 85–95%.	1. Cross-language recognition. 2. Detection accuracy: 80–90% .
Database Coverage	Large repository of Academic journals, submission of student reports, and content from the web pages.	Sources from the web, articles that are published, and from institutional repository.
Similarity Index Report	Similarity report percentage, a detailed report Matched sources are highlighted with colors called color codes.	Similarity score plus classified matches. More interpretive reports instead of just percentages.
Paraphrase handling	Moderate level of identifying paraphrasing.	Reconstructed statements can be detected at higher rates.
Interface and Integration	Has complex interface and integrated with Moodle and Blackboard.	User-friendly interface and paper submission done through strong email support systems.
Negatives /False Positives	Produce higher false positives as it matches common phrases and bibliography.	Tends to lower false positives with Filtering using context awareness.

Table 2: The advanced parameters essential for Turnitin and Urkundtools

Advanced Parameters	Remarks
Evaluation Metrics	Precision or Accuracy & Recall • Accuracy = correctly detected plagiarism/total detected • Recall = correctly detected plagiarism / actual plagiarism
Dataset Design	Strengthening the methodology by texting the document with AI-generated text, which is the most important area of research, and detecting the same paragraphs copied from multiple sources
Statistical Analysis	Generating standard deviation, confidence interval and comparing similarity scores would strengthen the academic credibility.

Plagiarism software applications might incorporate sophisticated techniques to publish the article worldwide. The paper discusses a handful of these, which is beyond the scope of the similarity report as shown in Table 2

V. ALGORITHMS THAT PROMOTE GREATER SIMILARITY

Turnitin and Urkund Plagiarism tools use various algorithms that drive to get better similarity reports to promote research article quality.

1. **String Matching Algorithms:** Boyremoore algorithm and knuth Morris Pratt will detect copy paste text that is strong for verbatim copying [8]. Applications for these techniques include text mining, document classification, content analysis, and plagiarism detection.[9]
2. **Document Finger Printing:** Rabin karp rolling hash algorithm breaks down text into pieces or chunks called as k-grams and chunk is translated to hash value. The winnowing algorithm allowed for the quick identification of copied parts while disregarding small modifications and alignment variations [10].
3. **Semantic Detection:** Natural language processing algorithms that include BERT models detect paraphrasing, replacement of synonym and similarity [11].
4. **Machine Learning Models:** Supervised machine learning models such as Support Vector Machine, Decision Tree, Navie Bayes, and Random Forest can search for similarities at the semantic level of text analysis when it comes to nuanced patterns of reworded sentences [12].
5. **Reference and citation detecting algorithms:** Verify and Validate references correctness, use of fake citation. Segmentation and entity resolution are two stages of citation matching. The goal of segmentation, also known as citation parsing, is to break down a bibliographic reference into useful components such author names, titles, publication years, etc [13].

VI. CONCLUSION

The efficiency of Turnitin and Urkund (Original) in identifying various types of plagiarism in academic texts is compared in this study. The results show that Turnitin's large and constantly growing academic database helps it perform well when it comes to uncovering direct textual similarities. Urkund, on the other hand, demonstrates a higher capacity for identifying contextually altered and paraphrased content, which is reinforced by its focus on semantic analysis and lower false positives. Both methods have unique advantages and disadvantages, indicating that no single system can fully combat all types of plagiarism. Similarity ratings offer helpful initial insights, but they shouldn't be taken at face value because accurate evaluation, necessitates careful analysis by subject matter specialists.

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The study also highlights the increasing significance of sophisticated methods including machine learning models, natural language processing, document fingerprinting, and string matching in enhancing the accuracy of plagiarism detection. The accuracy of similarity reports can be greatly increased by incorporating these strategies. A hybrid architecture that blends Urkund's skills in semantic and contextual analysis with Turnitin's vast database capabilities is advised. When combined with human judgment, this strategy can be recommended to offer a more solid and dependable way to uphold academic integrity in the rapidly changing field of digital research.

REFERENCES

1. Mohit Garg, Manu T R and Nabi Hasan., "Turnitin, Urkund (Original) and DrillBit Plagiarism Detection Software: A Comparative Study" May 2022 Conference: 10th International Library Information Professionals Summit (ILIPS 2022) At: Galgotias University Greater Noida Delhi NCR India.
2. Shah, J.N.; Shah, J.; Baral, G.; Baral, R. & Shah, J., "Types of plagiarism and how to avoid misconduct: Pros and cons of plagiarism detection tools in research writing and publication" Nepal J. Obstet. Gynaecol., 2021, 16(2), 3–18. https://doi.org/10.3126/njog.v16i2.42085
3. Md. hamidurrahman, Muhammad Shahidul islam , Syed Murtaza Hussain andrabi , J. P. Sharma , Md. Nasim Reza., "Comparing the similarity index across iThenticate, Ouriginal, and Turnitin plagiarism detection software"2024 https://doi.org/10.7752/jpes.2024.02051
4. Akshay Kumar and Abhash Kumar: "Comparative analysis of anti-Plagiarism tools Turnitin and others". Int. J. Res. Manage. 2023;5(2):237-240. https://doi.org/10.33545/26648792.2023.v5.i2c.117
5. Meo, Sultan A.; Talha, Muhammad1. Turnitin: Is it a text matching or plagiarism detection tool?. Saudi Journal of Anaesthesia 13(Suppl 1):p S48-S51,April 2019. | https://doi.org/10.4103/sja.SJA_772_18
6. Meo,S.A.,& Talha,M.(2019).Turnitin: Is it a text matching or plagiarism detection tool? Saudi Journal of Anaesthesia, 13(Suppl 1), S48–S51.
7. Diane Pecorari , Leeds University "Academic Writing and Plagiarism: A Linguistic Analysis"
8. KoloudAl-Khamaiseh Int. Journal of Engineering Research and Applications",www.ijera.com, ISSN : 2248-9622, Vol. 4, Issue 7 (Version 2), July 2014, pp.144-156
9. Mukku Bhagya Sri, Rachita Bhavsar, Preeti Narooka,"String Matching Algorithms", International Journal Of Engineering And Computer Science ISSN:2319-7242 Volume 7 Issue 3 March 2018, Page No. 23769-23772 Index Copernicus Value (2015): 58.10, 76.25 (2016) https://doi.org/10.18535/ijecs/v7i3.19
10. Arabi, H. and Akbari, M. (2022). Improving plagiarism detection in a text document using hybrid weighted similarity. Expert Systems with Applications, 207, 118034. https://doi.org/10.1016/j.eswa.2022.118034
11. Antonius, Franciskus &Orosoo, Myagmarsuren& K, Aanandha& Patra, Indrajit & S, Prema. (2023). Enhanced Plagiarism Detection through Advanced Natural Language Processing and E-BERT Framework of the Smith-Waterman Algorithm. International Journal of Advanced Computer Science and Applications. 14. https://doi.org/10.14569/IJACSA.2023.0140944.
12. O.Kamat et al., "Plagiarism Detection Using Machine Learning," arXiv, 2024, https://doi.org/10.48550/arXiv.2412.06241, IRJCS – December Issue,Volume 12, Issue 12 of December 2025
13. M. Fedoryszak et al., "Methodology for Evaluating Citation Parsing and Matching," Springer, 2013.
14. Taliatuba, Pooja P S , Sandeep, Shree Laxmi, Shushrut Patil., "Machine learning model to predict placement success", https://doi.org/10.26562/irjcs.2025.v1212.01, IRJCS – December Issue,Volume 12, Issue 12 of December 2025.
15. Akshay Sharma, Akshat Gupta, Akhilesh Yadav, Suryakant Yadav, Dr.Shivani Dubey, Dr.Vikas Singhal, Dharmendra Singh, Uma Shanker Yadav.,"Predictive Efficacy Assessment of Deep Learning Models for Apple Leaf Disease Detection" , https://doi.org/10.26562/irjcs.2025.v1212.06, IRJCS – December Issue,Volume 12, Issue 12 of December 2025.
16. Khushal Keshari, Mahfuz Haider, Mohd.Arshil,Dr.Ajay Kumar Sahu,Dr.Vikas Singhal., "Transformers in Sentiment Analysis: A Paradigm Shift in Deep Learning Research"., https://doi.org/10.26562/irjcs.2025.v1206.02, IRJCS, Volume 12, Issue 06 of May 2025.
17. Dr.M.Sakthivel, K. Chandru, K. Rishikumar., Deep Learning Strategies for Netbanking Fraud Detection using Face Biometrics. https://doi.org/10.26562/irjcs.2023.v1006.01, IRJCS:Volume 10, Issue 06 of July 2023.
18. Dr.Sumathi P Tanuja KN, Shri Lakshmi NK, Sahana S, Supritha PS, "Deep Fake Detection Using Deep Learning", https://doi.org/10.26562/irjcs.2025.v1211.08 IRJCS – November Issue,Volume 12, Issue 11 of November 2025