

RESEARCH

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Manuscript Preparation Guidelines for Journal of Advanced Technology and Applied Scientific Research

(The manuscript title must be written in Georgia, 14 pt, bold, and left-aligned. The title should be written in Title Case, with a maximum of 21 words. It must clearly and concisely reflect the core content of the manuscript.)

First Author^{1*)}, Second Author²⁾, Third Author³⁾

(Author names must be written in full without academic titles. The names must be written in Georgia, 11 pt, bold, and left-aligned. The corresponding author must be marked with an asterisk “*”).)

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(Affiliations and email must be written in Georgia, 10 pt, left-aligned, and single-spaced.)

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Abstract

(The heading “Abstract” must be written in Georgia, 10 pt, bold, left-aligned, and in Title Case.)

The abstract must be placed inside the bordered abstract box, written in Georgia, 10 pt, italic, single-spaced, and presented as one paragraph only. The abstract should briefly include the background, objectives, methodology, results, and main conclusions of the study, and must not exceed 300 words. At the end of the abstract, keywords must be provided, consisting of 3 to 6 significant terms written in lowercase and arranged alphabetically.

Keywords: advanced technology, applied scientific research, manuscript preparation, reference style, writing guidelines.

I. INTRODUCTION

The introduction should clearly present the background of the study from a data-driven perspective, emphasizing the importance of data science, machine learning, or artificial intelligence in addressing the problem. It must identify the research gap in existing methods, models, or datasets, supported by recent and relevant studies. The section should highlight the novelty and contribution of the proposed approach and conclude with the research objectives and expected outcomes.

II. METHODOLOGY

This section describes the overall research methodology and model development process. It should include a detailed explanation of the dataset used, including its source, characteristics, and any preprocessing steps such as data cleaning, normalization, or feature extraction. The section must also describe the selected model or algorithm, whether based on machine learning or deep learning

techniques, along with the training process and validation strategy. The experimental setup should be clearly explained to ensure reproducibility.

II.1 Research Procedure

The research procedure describes the experimental design or sampling method, data sources, observation techniques, variables measured, research design, and analytical methods used in the study. This section may be organized into subsections as needed.

II.1.1 Manuscript Formatting

Manuscripts must be prepared using a word processing application such as Microsoft Word in .doc or .docx format. The manuscript must be written in clear and proper scientific English. The document must use A4 paper size (21 cm × 29.7 cm), with top and bottom margins of 2.54 cm and left and right margins of 1.91 cm. The text must be written in Georgia, 10 pt, with single line spacing (1.0). The manuscript must follow the layout provided in this template. The main text must be arranged in a single-column format within the main content area. The first page includes a left sidebar for article history, copyright statement, and license information. Authors must not change the page layout, header, footer, sidebar, or main content structure. Each new paragraph must be indented by 10 mm, and no additional spacing should be inserted between paragraphs. Page numbers must be inserted sequentially in the header, aligned to the top right corner of each page, using Trebuchet MS, 11 pt. The manuscript should not exceed 10 pages, including tables and figures.

II.1.2 Section Hierarchy

The manuscript must follow a hierarchical structure consisting of main sections, subsections, and sub-subsections, with no more than five levels of hierarchy. Main section titles must be numbered using Roman numerals, written in uppercase, bold, and left-aligned within the main content area. Subsection and sub-subsection titles must be numbered hierarchically, written in title case, bold, and left-aligned. Body paragraphs must be justified with a consistent first-line indentation. Spacing between sections and paragraphs must remain consistent throughout the manuscript.

II.1.3 Tables, Figures, and Illustrations

Tables must be editable text (not images) and must include a title placed above the table, followed by a sequential Arabic number. Tables must be cited in the text and placed immediately after their first citation. All columns must have headings, and any notes must be placed below the table. Vertical lines are not allowed in tables.

Figures, graphs, and diagrams must be editable and not embedded as images where possible. Each figure must be clear, high-contrast, and readable. If a figure contains multiple parts, labels such as “(a)”, “(b)”, etc., must be included. Each figure must have a caption placed below the figure, centered, and numbered sequentially. All figures must be cited in the text and placed after their first mention.

Photographs must be of high quality and resolution to ensure clarity when enlarged. Each photograph must include a caption placed below the image and must be cited within the text.

II.1.4 Citation and Referencing Style

All citations must follow the IEEE format and must be arranged numerically based on their appearance in the text. Every statement or data taken from another source must be properly cited. Citations must be included within the text, figures, or tables using sequential numbers enclosed in square brackets, in the order they first appear. For example, [1] when cited within or at the end of a sentence. Multiple

references are cited as [1], [2] or as a range [1]–[4]. The same reference number must be reused each time that source is cited again in the manuscript.

III. RESULTS AND MODEL ANALYSIS

This section presents the results obtained from the proposed model. It should include performance metrics such as accuracy, precision, recall, F1-score, or other relevant evaluation measures. The use of confusion matrices, graphs, or tables is encouraged to provide a clear understanding of the model's performance. Additionally, comparisons with baseline or existing models should be included to demonstrate the effectiveness and improvement of the proposed approach. Results should be clearly presented and may be supported by tables, figures, or graphs.

III.1 Subsection 1 (Optional, bold)

III.2 Subsection 2 (Optional, bold)

The following is an example of table and figure formatting.

Table 1. Physical characteristics of bacterial cellulose with the addition of 0.5% nitrogen sources: ammonium sulfate and yeast extract

Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy ^a		

Assays were performed in triplicate. Mean $\pm$ SD values in the same column with different superscripts are significantly different ($p \leq 0.05$).

We suggest that you use a text box to insert a graphic (which is ideally a 300 dpi resolution TIFF or EPS file with all fonts embedded) because this method is somewhat more stable than directly inserting a picture. To have non-visible rules on your frame, use the MS Word "Format" menu, select Text Box > Colors and Lines to choose No Fill and No Line.



Figure 1. Example figure showing part (a) and part (b).

IV. DISCUSSION

The discussion section provides an in-depth interpretation of the results. It should analyze the performance of the model, explain patterns or behaviors observed in the data, and highlight key insights derived from the analysis. This section should also discuss the strengths and limitations of the proposed method and relate the findings to existing studies in the field.

V. CONCLUSION

The conclusion must present the essential findings of the study as answers to the research objectives or hypotheses. It should not repeat the results and discussion but instead synthesize the main outcomes. Additional remarks on future

work or potential research directions may be included if necessary. The conclusion may be written in paragraph form or structured points.

ACKNOWLEDGMENT

This section expresses gratitude to funding agencies, sponsors, and individuals or institutions that contributed to the research. It must be written in formal academic English.

REFERENCES

The reference list must follow the IEEE citation style and be arranged numerically according to the order of first citation in the manuscript. In-text citations must be written using sequential numbers enclosed in square brackets, such as [1], [2], or [3]. Multiple references may be cited as [1], [2] or as a range, such as [1]–[4]. The same reference number must be used consistently whenever the same source is cited again in the manuscript. Author names in the reference list must follow the IEEE style. For references with one to six authors, all author names must be listed using initials and surnames. For references with more than six authors, list the first author followed by “et al.” Article titles must be written in sentence case and enclosed in quotation marks, while journal titles must be written in title case and italicized. Each reference should include complete bibliographic information, such as author names, article title, journal or source title, volume, issue, page numbers, year, and DOI when available. Authors are encouraged to use reference management tools such as Mendeley, EndNote, Zotero, or similar applications to ensure accuracy, consistency, and conformity with the IEEE citation style. The following examples are provided only to illustrate reference formatting. Actual manuscripts must include at least 10 references. The source-type headings below are provided only for formatting examples and must not be used in the final manuscript reference list.

Scientific Journal Article

- [1] B. Kuswandi and C. Maryska, “Real time on-package freshness indicator for guavas packaging,” *Food Measure*, vol. 7, pp. 29–39, 2013.
- [2] M. Salem, R. A. Amin, G. Amany, and S. Afifi, “Studies on antimicrobial and antioxidant efficiency of some essential oils in minced beef,” *Journal of American Science*, vol. 6, no. 12, pp. 691–700, 2016.
- [3] A. Pacquit, K. T. Lau, H. McLaughlin, J. Frisby, B. Quilty, and D. Diamond, “Development of a volatile amine sensor for the monitoring of fish spoilage,” *Talanta*, vol. 69, no. 2, pp. 515–520, 2006.
- [4] L. Breiman, “Random forests,” *Machine Learning*, vol. 45, no. 1, pp. 5–32, Oct. 2001, doi: 10.1023/A:1010933404324.
- [5] J. Jumper et al., “Highly accurate protein structure prediction with AlphaFold,” *Nature*, vol. 596, no. 7873, pp. 583–589, Aug. 2021, doi: 10.1038/s41586-021-03819-2.

Thesis / Dissertation

- [6] Y. Hasnedi, “Pengembangan kemasan cerdas (smart packaging) dengan sensor berbahan dasar chitosan-asetat, polivenol alkohol, dan pewarna indikator kebusukan fillet ikan nila,” Skripsi, Institut Pertanian Bogor, Bogor, Indonesia, 2009.

Proceedings

- [7] P. B. Durst, D. V. Johnson, R. N. Leslie, and K. Shono, Eds., *Forest Insects as Food: Humans Bite Back: Proceedings of a Workshop on Asia-Pacific Resources and Their Potential for Development*, Chiang Mai, Thailand, Feb. 19–21, 2008. Bangkok, Thailand: Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Pacific, 2010.

Book

- [8] W. Strunk Jr. and E. B. White, *The Guide to Everything and Then Some More Stuff*. New York, NY, USA: Macmillan, 1979.

Book Chapter

- [9] J. M. Bergquist, "German Americans," in *Multiculturalism in the United States: A Comparative Guide to Acculturation and Ethnicity*, J. D. Buenker and L. A. Ratner, Eds. New York, NY, USA: Greenwood, 1992, pp. 53–76.

Patent

- [10] H. S. Primack, D. E. Reedy, and F. R. Kin, "Method of stabilizing chelated polyvalent metal solutions," U.S. Patent 4 455 287, Jun. 19, 1984.