

Review Form 3

Journal Name:	Asian Journal of Research in Computer Science
Manuscript Number:	Ms_AJRCOS_129749
Title of the Manuscript:	Ant colony optimization for traveling salesman problem: A review
Type of the Article	

PART 1: Comments

	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	This manuscript holds significant importance for the scientific community as it synthesizes recent advancements in Ant Colony Optimization (ACO) and its applications to the complex Traveling Salesman Problem (TSP), a cornerstone in combinatorial optimization research. By exploring innovative approaches such as hybridization with genetic algorithms and Firefly methods, and the integration of adaptive and parallel computing techniques, the manuscript provides valuable insights into enhancing algorithmic performance and scalability. It not only addresses practical challenges in logistics, resource management, and dynamic routing but also highlights future directions involving machine learning and quantum computing, fostering a pathway for further innovation. This review serves as a critical reference for researchers and practitioners aiming to develop advanced solutions to real-world optimization problems.	
Is the title of the article suitable? (If not please suggest an alternative title)	YES	

Review Form 3

<p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p>	<p>The abstract of the manuscript is comprehensive and provides a clear overview of the study's focus, covering the Traveling Salesman Problem (TSP), the role of Ant Colony Optimization (ACO), and recent advancements in hybridization, scalability, and real-world applications. However, a few refinements could enhance its impact and clarity:</p> <ol style="list-style-type: none"> Highlight Specific Contributions: The abstract could briefly mention specific innovations (e.g., the integration of Firefly algorithms or quantum computing) to emphasize the novelty of the review. Address Limitations: While the abstract acknowledges challenges like scalability and parameter tuning, it could provide a more balanced view by summarizing the proposed solutions or future directions. Conciseness: Certain phrases could be streamlined to improve readability, such as rephrasing "With the help of cutting-edge technologies such as machine learning and quantum computing....." to "Leveraging emerging technologies like machine learning and quantum computing..." <p>Overall, the abstract is effective but could benefit from a sharper focus on the unique contributions and actionable insights of the review.</p>	
<p>Is the manuscript scientifically, correct? Please write here.</p>	<p>The manuscript appears to be scientifically accurate and well-grounded in the context of Ant Colony Optimization (ACO) and its application to the Traveling Salesman Problem (TSP). It provides a detailed discussion of ACO's bio-inspired mechanisms, theoretical underpinnings, and practical applications. The inclusion of recent advancements, such as hybridization with Firefly and genetic algorithms, adaptive parameter tuning, and the use of parallel computing, aligns with current trends in optimization research.</p> <p>The references are diverse and relevant, supporting the manuscript's claims with credible sources. The theoretical explanations are consistent with established knowledge, and the challenges, such as scalability and computational overhead, are accurately identified and discussed.</p> <p>No significant scientific inaccuracies were noted. However, a minor area for potential enhancement could involve presenting quantitative data or experimental comparisons to further substantiate claims, particularly regarding improvements in ACO performance through hybrid techniques.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>The references in the manuscript are extensive, diverse, and include recent works, making them sufficient to support the paper's claims and discussions. The inclusion of references from 2024 and other recent years demonstrates that the manuscript integrates the latest research developments. The coverage of various aspects, such as hybrid algorithms, parallel computing, and adaptive tuning, reflects a well-rounded literature review.</p> <p>Suggestions for Additional References: To further enrich the manuscript, the following areas could be explored with additional references:</p> <ol style="list-style-type: none"> Machine Learning in ACO Optimization: Consider referencing recent studies that focus on the integration of machine learning techniques for dynamic parameter tuning and decision-making within ACO. Quantum Computing Applications in ACO: Include references discussing experimental or theoretical works on applying quantum algorithms to enhance ACO scalability and efficiency. <p>If specific gaps or areas emerge upon further review, targeted references could be suggested for inclusion. Overall, the current references are comprehensive and aligned with the manuscript's objectives.</p>	

Review Form 3

<p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The language and English quality of the article are generally suitable for scholarly communication, with clear and concise explanations of complex concepts. The manuscript effectively conveys the main ideas and research contributions, making it accessible to the target audience. However, there are minor areas for improvement:</p> <ol style="list-style-type: none"> Grammar and Typographical Errors: Some phrases require grammatical refinement, such as "Travel Salesman Problem" (should be "Traveling Salesman Problem")(IN THE INTRODUCTION PART,FIRST LINE). A careful proofreading could address these inconsistencies. Clarity and Flow: A few sentences are lengthy or overly complex, which could affect readability. For instance, rephrasing long sentences into shorter, more direct ones would enhance comprehension. Consistency in Terminology: Uniformity in technical terms and acronyms (e.g., consistent use of "ACO" instead of switching between "CCO" or other terms) would ensure better clarity. 	
<p>Optional/General comments</p>	<p>The manuscript is a valuable contribution to the field of optimization research, particularly for its thorough review of Ant Colony Optimization (ACO) applied to the Traveling Salesman Problem (TSP). The authors successfully highlight the evolution of ACO, its challenges, and its potential future directions, making it a resourceful document for both researchers and practitioners.</p> <p>General Suggestions:</p> <ol style="list-style-type: none"> Visuals and Tables: Enhancing the quality and clarity of figures Applications: Adding a brief section or subsection on ACO's industrial use cases, such as in logistics or robotics, could demonstrate its real-world impact. <p>The manuscript is well-structured and addresses relevant topics comprehensively. With minor refinements, it has strong potential for publication and significant impact in the field.</p> <p>No competing interest issues are evident in this manuscript. The content appears to be an objective review of advancements in Ant Colony Optimization (ACO) for the Traveling Salesman Problem (TSP), with no indications of biases or conflicts of interest.</p> <p>After reviewing the manuscript, there are no clear indications of plagiarism. The content is detailed and appears to be original, with proper citations provided for referenced works.</p>	

PART 2:

	<p>Reviewer's comment</p>	<p>Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</p>
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

Reviewer Details:

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