Review of: "Generative Artificial Intelligence Using Machine Learning on Wireless Ad Hoc Networks"

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Potential competing interests: No potential competing interests to declare.

Evaluation: MAJOR REVISION

Dear Editor, please send the research for evaluation again after modifications are corrected by the author

Comments

The paper presents an innovative use case of GenAI in wireless Ad Hoc networks and sets a solid foundation for future research. However, the lack of detailed analysis and practical evaluation limits its immediate applicability. Expanding on these aspects would significantly improve the study's impact and relevance. The abstract provides a clear overview of the research, emphasizing the use of Generative Artificial Intelligence (GenAI) to enhance the efficiency, performance, and connectivity of wireless Ad Hoc networks. The study outlines the application of generative neural networks (GNNs), Multilayer Perceptron (MLP), and Radial Basis Function (RBF) to optimize network performance by analyzing data such as heat maps, access point placement, and bandwidth metrics. The inclusion of both theoretical modeling and practical evaluation is a strength. However, the abstract could benefit from concisely stating the specific outcomes or quantitative improvements achieved through the proposed approach. The introduction effectively contextualizes the problem, highlighting the rapid growth of wireless communication networks and the challenges posed by the exponential rise in nodes, IoT integration, and real-time data usage. Key points include:

- The importance of GenAI for generating new data to analyze and optimize network performance.
- Identification of specific challenges such as frequency collisions, bandwidth constraints, and security vulnerabilities.

While the introduction sets a solid stage, it could elaborate on the novel contributions of the study compared to prior works. For example, it lacks a discussion on how the proposed GenAI approach distinguishes itself from traditional optimization methods in wireless networks.

Recommendations

1. Include detailed experimental results (e.g., R^2 values, heat maps) to substantiate findings.
2. Compare the proposed methodology with baseline techniques to showcase its advantages.
3. Discuss practical deployment challenges and potential solutions, especially for large-scale networks.

4. Extend future work to include real-world testing environments for validating the proposed framework.