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REVIEWER'S REPORT

Manuscript No.: 51885 Date: 28-05-2025

Title: "ENHANCEMENT OF FOG CACHING USING NATURE INSPIRATION 1 OPTIMIZATION TECHNIQUE BASED ON CLOUD COMPUTING"

Recommendation:
Accept as it is …… **Yes** ……
Accept after minor revision……
Accept after major revision ……
Do not accept (*Reasons below*) ……

Rating	Excel.	Good	Fair	Poor
Originality		Yes		
Techn. Quality		Yes		
Clarity		Yes		
Significance		Yes		

Reviewer Name: Gulnawaz Gani

Reviewer's Comment for Publication.

This paper proposes a hybrid Nature-Inspired Optimization Technique (NIOT) that effectively enhances fog caching performance by optimizing cache placement and retrieval using genetic algorithms and particle swarm optimization.

Detailed Reviewer's Report

- The paper proposes a hybrid Nature-Inspired Optimization Technique (NIOT) combining Genetic Algorithms (GA) and Particle Swarm Optimization (PSO) for fog caching, which is a strong approach for dynamic environments.
- While the methodology outlines the components and algorithm steps, a more in-depth discussion of the specific fitness function's weighting factors (w1,w2,w3) and their empirical derivation would be beneficial.
- The performance evaluation mentions comparisons with LRU and RR, but a more detailed breakdown of the simulation setup (e.g., network size, data access patterns, traffic loads) would enhance reproducibility and credibility.
- The paper claims significant improvements in latency and cache hit ratio, but presenting quantitative results (e.g., specific percentage improvements or comparative graphs) would make the claims more impactful.
- The future scope mentions extending the framework with advanced machine learning for real-time data prediction, which suggests that the current NIOT alone might not fully address dynamic data popularity.

Suggestions: The paper is a good read for the audience but before publication make sure the figure inside the paper is displayed correctly.