

REVIEWER'S REPORT

Manuscript No.: JNCS -083

Title: FEDERATED LEARNING FOR PRIVACY-PRESERVING DATA ANALYSIS: ARCHITECTURES, APPLICATIONS, CHALLENGES, AND FUTURE DIRECTIONS.

Recommendation:

Accept as it is
Accept after minor revision.....
 Accept after major revision
 Do not accept (*Reasons below*)

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

Reviewer Id: JPR-205

Reviewer's Comment for Publication.

The manuscript provides a comprehensive and well-organized review of federated learning for privacy-preserving data analysis, covering its architecture, training process, Federated Averaging, horizontal and vertical federated learning, and important applications in healthcare, financial services, mobile computing, industrial systems, and smart cities. The discussion of privacy leakage, differential privacy, secure aggregation, poisoning attacks, non-IID data, and communication constraints demonstrates good technical coverage of the major challenges associated with federated learning. The proposed secure federated learning framework and discussion of future directions, including adaptive aggregation, edge learning, robust systems, and standardized benchmarking, further enhance the relevance of the paper. However, the review methodology should provide clearer information about the literature search strategy, databases, publication period, and study-selection criteria, and the manuscript would benefit from a more detailed comparative analysis of federated learning approaches and privacy-preserving mechanisms. Overall, the manuscript addresses an important and rapidly developing research area and is suitable for publication after minor revision.

.