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REVIEWER'S REPORT

Manuscript No.: **IJAR-55234**

Title: COMPARATIVE ANALYSIS OF CONVOLUTIONAL NEURAL NETWORKS (CNN) FOR LAND USE CLASSIFICATION BASED ON AGRICULTURAL SATELLITE IMAGES

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 Name: **Sudhanshu Sekhar Tripathy**

Reviewer's Comment for Publication.

(*To be published with the manuscript in the journal*)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewer's name.

Reviewer's Comment for Publication

The manuscript presents a comparative analysis of multiple convolutional neural network (CNN) architectures for agricultural land-use classification using satellite imagery. The topic is relevant to remote sensing and geospatial analytics, and the experimental results are promising. The study demonstrates clear practical value; however, minor revisions are required to improve clarity, presentation quality, and methodological transparency.

Detailed Reviewer's Report

1. Scope & Relevance

The study falls well within the scope of remote sensing, machine learning, and agricultural informatics. The application of CNNs to satellite-based land-use classification is timely and relevant, particularly for environmental monitoring and agricultural planning.

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2. Structure & Technical Presentation

The manuscript follows a logical structure, including introduction, related work, methodology, results, and conclusion. Figures and tables are generally informative, but some captions and formatting require refinement. Minor layout inconsistencies and spacing issues should be corrected to improve readability.

3. Methodological / Analytical Details

The methodology is appropriate and clearly outlines dataset usage, preprocessing, model architectures, and evaluation metrics. However, additional clarification on hyperparameter selection and class imbalance handling would further strengthen the experimental rigor.

4. References & Citations

The reference list is comprehensive and includes recent and relevant studies in deep learning and remote sensing. Minor formatting inconsistencies and duplicated URLs should be corrected. Overall, the citations adequately support the study.

5. Language & Style

The manuscript is generally written in clear academic English. Minor grammatical issues, spacing inconsistencies, and occasional long sentences should be revised for improved clarity and fluency.

6. Key Strengths

- Strong comparative evaluation of multiple CNN architectures
- Use of a well-known and reliable satellite dataset (EuroSAT)
- Clear experimental results with quantitative performance metrics
- Practical relevance to agricultural land-use monitoring

7. Areas for Improvement (Minor Revision Needed)

- Improve formatting consistency (spacing, figure placement, captions)
- Keyword is missing. Add 4 to 5 Keywords after Abstract
- Clarify preprocessing steps and hyperparameter choices

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- Reduce redundancy in background explanations
- Enhance discussion on class imbalance effects and limitations

Final Feedback to Author

The manuscript presents a solid and relevant contribution to the field of satellite-based land-use classification using deep learning. With minor revisions focused on presentation quality, clarity, and small methodological details, the paper will be suitable for publication.