Round 1: Coding and Data Analysis Task

Task: Candidates are required to select a recent research paper from a reputable source (IEEE, Springer, or SCI journal) related to data science or machine learning or image processing or neural networks, or deep learning or your interested area of research.

They must:

Develop a Unique Solution: Based on the content of the selected research paper, candidates should propose a unique solution or improvement.

Implement the Solution: The proposed solution must be implemented using their own coding skills.

Prepare a Comprehensive Document:

The document should include:

Literature Review: A review of the literature and identification of research gaps in the selected paper.

Proposed Algorithm with steps and architecture: architecture of the proposed solution.

Research Questions and Objectives: Clearly defined research questions and objectives of the work.

Visualizations: Screenshots of output visualizations to support the findings.

Comparative Analysis: A comparative analysis of existing algorithms with the proposed solution.

Submission:

The document and source code should be submitted as a ZIP file. All code must be original, well-commented, and plagiarism-free.

Video Explanation:

Candidates must also submit a video presentation (up to 15 minutes) explaining the following:

Novelty and originality of the proposed solution.

Clarity and depth of the literature review.

Technical implementation and coding proficiency.

Quality of visualizations and comparative analysis.

Overall structure and presentation of the document.

Data handling, preprocessing, and model development.

Case Study Preparation: Candidates are also required to prepare a case study document that includes:

Problem Statement and Objectives: Clearly defined problem statement and objectives.

Data Preprocessing: Detailed steps of data preprocessing.

Model Selection and Development: Explanation of the model selection process and development.

Visualizations and Insights: Visualizations of the results and insights gained from the analysis.

Recommendations: Recommendations based on the analysis.

Submission:

The case study should be submitted as a PDF document with relevant code files. The candidate will present their findings in a 15-minute video recording, uploaded to a file-sharing service (e.g., Google Drive).

IMPORTANT POINTS FOR DEVELOPERS

Stage-1

1. Focus towards the topic is important

You have to suggest five journals where we will publish the present paper.

Q2 journals-3

Q3 journals-2 as priority, which we can find easily in the reference papers.

2. The suggested 5 journals must be cost effective.

3. References plays a critical role so check references, they must be scopus indexed, SCI journals and no conference journals.

4. No journal without a DOI number was encouraged as a reference for this study.

5. At least 25+ references were the minimum for any coding work.

6. The journal must be downloadable or have to send that file if it is IEEE or any paid version of the journal means.

7. Few of the references must be from suggested journals.(From Point-1)

8. Finalize the journal's priority where we want to publish.(From Point-1)

9. Finalize the reference list before starting the writing of the draft paper as per your coding. The final version will be completed by expert writers, but they will need to understand the work quality.

Draft paper guidelines

1. As discussed what are the datasets, methodologies to follow , they should be discussed in the references papers is required.

2. Existing codes and models, comparisons, and time and space complexities must be discussed.

3. Finalize the steps of the algorithm and name the new algorithm.

4. Cross-validation, apart from the accuracy needed to be checked, such as feature selection.5. Can we develop a new method? If so, what could be the results for the existing algorithms and new algorithms, and if we go in a traditional way, what is the result?

6. Balanced dataset, unbalanced dataset performance of the new proposed algorithm etc. need to be finlaized and do the coding part

7. The paper format is finalized based on the points already specified, and the suggested links are provided.

8. Visualization of the results is also important.