Identity and Purpose Checklist

Data Management (DM)

  1. **Validation and Verification**

- Is the data validation performed throughout the data management process?
- Are the data management requirements addressed? [Yes/No]

  4. **Data Verification**

- Is a data verification step performed to confirm the appropriateness of the defined ODD and data sets used for training, validation, and verification of the ML model?
- Are the data sets verified for accuracy, completeness, and representativeness with respect to the ML requirements and AI/ML constituent ODD? [Yes/No]

Learning Management (LM)

  1. **Model Architecture**

- Is the ML model architecture described?
- Is the model family selection justified?
- Are the learning algorithm(s) selected and justified? [Yes/No]

  5. **Training Process Requirements**

- Are the requirements for model bias and variance metrics and acceptable levels documented?
- Are the requirements for model robustness and stability metrics and acceptable levels documented?
- Is the training environment (hardware and software) identified?
- Are the hyper-parameters identified and set?
- Are the expected performance metrics with training, validation, and test sets documented? [Yes/No]

  11. **Model Training**

- Is the result of the model training documented?
- Are any model optimisation strategies (e.g., pruning, quantization) documented and justified? [Yes/No]

  14. **Generalisation Bounds**

- Are quantifiable generalisation bounds provided? [Yes/No]

Evaluation and Verification

  1. **Model Evaluation**

- Is the performance of the trained model evaluated based on the test data set?
- Are the results of the model evaluation documented?

  4. **Requirements-Based Verification**

- Is a requirements-based verification of the trained model behavior performed?

6. **Stability Analysis**

   • Is an analysis on the stability of the learning algorithms performed? [Yes/No]

8. **Model Stability Verification**

   • Is the verification of the stability of the trained model documented, covering the whole AI/ML constituent ODD?

Data Management (DM) and Learning Management (LM) Integration

1. **Data Set Independence**

   • Are the data sets verified for independence requirements between them?

3. **Unwanted Bias Elimination**

   • Is unwanted bias inherent to the data sets identified and eliminated? [Yes/No]

Note: This checklist is generated based on the provided requirement and reference. Please review and verify the completeness of this checklist with the author and reviewer.