Checklist for Author and Reviewer: AI/ML Software Development

IDENTITY AND PURPOSE

DQRs (Data Quality Requirements)

- Have you captured DQRs for all data required for training, testing, and verification of the AI/ML constituent?
    - ○ Yes / No
- Are the DQRs relevant to support the intended use?
    - ○ Yes / No
- Can you determine the origin of the data?
    - ○ Yes / No
- Have you specified requirements related to the annotation process?
    - ○ Yes / No
- What is the format, accuracy, and resolution of the data?
    - ○ [Insert details]
- Is the data traceable from its origin to its final operation through the whole pipeline?
    - ○ Yes / No
- Are there mechanisms ensuring that the data will not be corrupted while stored, processed, or transmitted?
    - ○ Yes / No
- Are the data sets complete and representative?
    - ○ Yes / No
- Is there a level of independence between training, validation, and test data sets?
    - ○ Yes / No

Data Relevance

- For each type of data representing an operating parameter of the AI/ML constituent:
    - ○ Is the accuracy of the data documented?
        - ■ Yes / No

- ○ Is the resolution of the data documented?
  - ■ Yes / No
- ○ Is the quality of annotated data documented?
  - ■ Yes / No
- ○ Is the integrity of the data (assurance that it has not been corrupted) documented?
  - ■ Yes / No
- ○ Are necessary manipulations of the data (e.g., anonymization) documented?
  - ■ Yes / No

Inference Model Verification

IMP-08: Performance Evaluation

- Have you performed an evaluation of the performance of the inference model based on the test data set?
  - ○ Yes / No
- Is the result of the model verification documented?
  - ○ Yes / No

IMP-09: Stability Verification

- Have you verified the stability of the inference model?
  - ○ Yes / No
- Are verification cases addressing anticipated perturbations in the operational phase due to fluctuations in data input (e.g., noise on sensors) included?
  - ○ Yes / No
- Are nominal, singular point, edge, and corner cases included in the stability verification?
  - ○ Yes / No

IMP-10: Robustness Verification

- Have you verified the robustness of the inference model in adverse conditions?
  - ○ Yes / No
- Are test cases including edge or corner cases within the ODD (e.g., weather conditions like snow, fog) and OoD test cases included?

○ Yes / No

Inference Model Integration

IMP-11: Requirements-Based Verification

- Have you performed requirements-based verification of the inference model behavior when integrated into the AI/ML constituent?

  ○ Yes / No