REPRODUCIBILITY CHECKLIST

Additive manufacturing process monitoring and quality prediction systems Jiarui Xie, Mutahar Safdar, Andrei Mircea, Yan Lu, Hyunwoong Ko, Zhuo Yang, Yaoyao Fiona Zhao*

Version 1.0 – clean version

Business Understanding

- □ RQ1. Is the manufacturing system encompassing process technology and associated hardware component(s) reported?
- □ RQ2. If applicable, is customization of the manufacturing system reported?
- □ RQ3. Are characteristics of the material system reported?
- □ RQ4. Is the machine learning modeling purpose discussed?
- □ RQ5. Are the physical phenomena being captured by the sensing system introduced?

Data Understanding

- **RQ6.** Are sensor type(s) and specification(s) provided?
- □ RQ7. Are the sensor settings or calibration details discussed?
- **RQ8.** Are the sensor deployment details discussed?
- **RQ9.** Are the data modalities, formats, and types introduced?
- □ RQ10. Are the relevant statistics provided?
- □ RQ11. Are the experimental design settings for data acquisition introduced?

Data Handling

- □ RQ12. Are the data preparation techniques discussed, if any?
- □ RQ13. Are the data preprocessing techniques discussed, if any?
- □ RQ14. Is there a link to a downloadable version of the dataset?

Modeling

- □ RQ15. Is there a clear description of the machine learning algorithm?
- □ RQ16. Are the details of the model described?
- □ RQ17. Are the details of model training described?
- □ RQ18. If applicable, are hyperparameter search and selection procedures explained?
- □ RQ19. Is the final trained model shared?
- □ RQ20. Is the code open access or provided?

Evaluation

□ RQ21. Are the methods and metrics of model selection illustrated?

Deployment

- □ RQ22. Is the computational hardware described?
- □ RQ23. Is the computational software described?