

Checklist for supervised clinical ML study

Before paper submission			
Study design (Part 1)	Completed: page number		Notes if not completed
The clinical problem in which the model will be employed is clearly detailed in the paper.	<input checked="" type="checkbox"/>	1	
The research question is clearly stated.	<input checked="" type="checkbox"/>	1, 2	
The characteristics of the cohorts (training and test sets) are detailed in the text.	<input checked="" type="checkbox"/>	2	
The cohorts (training and test sets) are shown to be representative of real-world clinical settings.	<input checked="" type="checkbox"/>	3	
The state-of-the-art solution used as a baseline for comparison has been identified and detailed.	<input checked="" type="checkbox"/>	1	
Data and optimization (Parts 2, 3)	Completed: page number		Notes if not completed
The origin of the data is described and the original format is detailed in the paper.	<input checked="" type="checkbox"/>	2	
Transformations of the data before it is applied to the proposed model are described.	<input checked="" type="checkbox"/>	3	
The independence between training and test sets has been proven in the paper.	<input checked="" type="checkbox"/>	2, 3	
Details on the models that were evaluated and the code developed to select the best model are provided.	<input checked="" type="checkbox"/>	3, 4	
Is the input data type structured or unstructured?	<input checked="" type="checkbox"/> Structured <input type="checkbox"/> Unstructured		
Model performance (Part 4)	Completed: page number		Notes if not completed
The primary metric selected to evaluate algorithm performance (eg: AUC, F-score, etc) including the justification for selection, has been clearly stated.	<input checked="" type="checkbox"/>	3, 4	
The primary metric selected to evaluate the clinical utility of the model (eg PPV, NNT, etc) including the justification for selection, has been clearly stated.	<input checked="" type="checkbox"/>	3, 4	
The performance comparison between baseline and proposed model is presented with the appropriate statistical significance.	<input checked="" type="checkbox"/>	4	
Model Examination (Parts 5)	Completed: page number		Notes if not completed
Examination Technique 1 ^a	<input checked="" type="checkbox"/>	4	

Examination Technique 2 ^a	<input checked="" type="checkbox"/>	5	
A discussion of the relevance of the examination results with respect to model/algorithm performance is presented.	<input checked="" type="checkbox"/>	5	
A discussion of the feasibility and significance of model interpretability at the case level if examination methods are uninterpretable is presented.	<input checked="" type="checkbox"/>	5	
A discussion of the reliability and robustness of the model as the underlying data distribution shifts is included.	<input checked="" type="checkbox"/>	5	
*Common examination approaches based on study type: * For studies involving exclusively structured data coefficients and sensitivity analysis are often appropriate * For studies involving unstructured data in the domains of image analysis or NLP: saliency maps (or equivalents) and sensitivity analysis are often appropriate			
Reproducibility (Part 6): choose appropriate tier of transparency			Notes
Tier 1: complete sharing of the code	<input checked="" type="checkbox"/>		
Tier 2: allow a third party to evaluate the code for accuracy/fairness; share the results of this evaluation	<input checked="" type="checkbox"/>		
Tier 3: release of a virtual machine (binary) for running the code on new data without sharing its details	<input checked="" type="checkbox"/>		
Tier 4: no sharing	<input checked="" type="checkbox"/>		

PPV: Positive Predictive Value

NNT: Numbers Needed to Treat

^a Common examination approaches based on study type: for studies involving exclusively structured data, coefficients and sensitivity analysis are often appropriate; for studies involving unstructured data in the domains of image analysis or natural language processing, saliency maps (or equivalents) and sensitivity analyses are often appropriate. Select 2 from this list or chose an appropriate technique, document each technique used on the appropriate line above.