

Supplementary appendix 3. Supplementary Assessment Checklist of Reporting Quality (example of design details with simulated data)

Section/Topic	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Input data selection											
Description of database	1	2	2	2	2	2	2	2	2	2	2
Model performance											
Research team	2	2	2	2	2	2	2	2	2	2	2
Data preprocessing	3	2	2	2	2	2	2	2	2	2	2
Method and approach	4	2	2	2	2	2	2	2	2	2	2
Objective function	5	2	0	1	0	2	0	0	2	2	2
Optimization technique	6	2	0	1	0	2	0	0	2	2	2
Computational efficiency and cost	7	0	0	0	0	0	2	0	0	0	0

Note:

Description of database: Describe the sources (e.g., primary data or secondary data) and types (e.g., 2D data or 3D data) of the database; Describe the equipment types (e.g., phone camera, digital camera, or Di3D dynamic face capturing system) and settings (e.g., single-camera or multiple-camera) used for recording facial expressions.

Research team: Present whether both professional computer scientists and clinical staff are included in the research (e.g., the research team is comprised of computer scientists, clinicians, or nurses).

Data preprocessing: Describe the details of the data engineering and feature engineering (including data cleansing, instances selection and partitioning, feature tuning, representation transformation, feature extraction, feature selection, feature construction, etc.).

Method and approach: Specify the types of machine learning algorithms (e.g., supervised learning, unsupervised learning, reinforcement learning) and model types (e.g., artificial neural networks, decision trees, support vector machines, Bayesian networks).

Objective function: Provide details on the objective function (such as maximum likelihood, hinge loss).

Optimization technique: Provide details on the optimization method (e.g., stochastic gradient descent, Bayesian variational inference).

Computational efficiency and cost: Provide details on the computational efficiency (e.g., speed, cloud space, etc.) and cost related to

the **computational assessment** (e.g. required GPU resources, large cluster, etc.)