 Definition: Algorithmic Vanity Algorithmic vanity refers to the use of complex algorithms—often machine learning or artificial intelligence—not for their real utility, but to create the appearance of innovation, sophistication, or scientific rigor. It is a form of academic or institutional self-promotion where the algorithm serves more to impress than to solve.

 Key Characteristics: Use of advanced models (e.g., neural networks, random forests) where simpler methods would suffice

Prioritization of performance metrics (e.g., AUC, accuracy) over clinical or real-world utility

Heavy reliance on buzzwords like “explainable AI”, “causal modeling”, “deep learning” — without meaningful application

Inclusion of decorative tools (e.g., SHAP plots, nomograms) to signal interpretability while adding little value

No evidence of implementation impact (i.e., does not change practice, outcomes, or decisions)

 Example (in context of medical research): A hospital develops a random forest model to predict catheter-associated UTI, claiming 97% accuracy. But it never tests whether the model reduces infections or improves care. A simple logistic regression would have sufficed. The AI model becomes a performance of intelligence, not a tool for better medicine. That’s algorithmic vanity.