

False Claims Estimator Report

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Input file: binary_classification.csv

Task: Binary Classification

1. Dataset overview

The uploaded dataset contains **2000** rows and **17** columns (total size: **34000** values).

The table below shows the first rows of the dataset for inspection.

case_id	ground_truth	alg_01	alg_02	alg_03	alg_04	alg_05	alg_06
1	1	1	0	1	0	0	0
2	1	0	1	0	1	0	1
3	1	0	0	1	1	0	0
4	0	0	0	0	0	0	1
5	0	1	1	0	0	0	0
6	1	1	1	1	1	1	0
7	0	1	1	0	0	0	0
8	1	1	0	1	1	0	1
9	1	1	1	1	1	1	1
10	0	0	1	0	1	0	0

2. Data integrity checks

All required data integrity checks were successfully passed.

- Required columns present (case_id, ground_truth). **(OK)**
- Found 15 algorithm columns. **(OK)**
- All labels are integer-encoded. **(OK)**
- Ground-truth labels are binary (0/1). **(OK)**
- Algorithm predictions are consistent with ground-truth labels. **(OK)**

3. Quantitative results

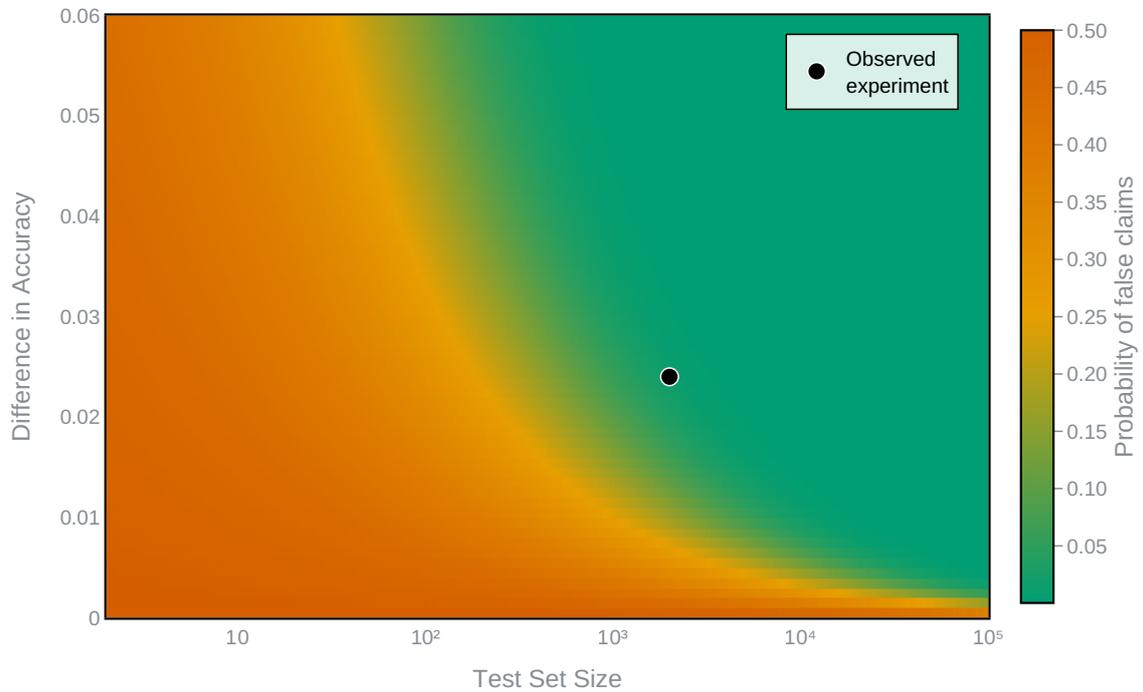
The top-ranked algorithm (**alg_02**) achieved an accuracy of **0.8110**, while the second-ranked algorithm (**alg_10**) achieved an accuracy of **0.7870**.

The observed accuracy gap between the two methods is **0.0240**, computed over **2000** test cases.

Probability of false claim: 2.75% — Low probability of false claim

4. Contextual probability heatmap

The figure below situates the observed performance difference and test set size within a broader probability landscape, illustrating how the likelihood of false claims varies across experimental conditions.



References

Christodoulou, E., Reinke, A., Andr e, P., Godau, P., Kalinowski, P., Houhou, R., Erkan, S., Sudre, C. H., Burgos, N., Boutaj, S., et al. **False Promises in Medical Imaging AI? Assessing Validity of Outperformance Claims.** arXiv preprint arXiv:2505.04720, 2025.

Open-access article available at: <https://arxiv.org/pdf/2505.04720>

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@article{christodoulou2025false,  
  title={False Promises in Medical Imaging AI? Assessing Validity of Outperformance Claims},  
  author={Christodoulou, Evangelia and Reinke, Annika and Andr e, Pascaline and Godau,  
Patrick  
  and Kalinowski, Piotr and Houhou, Rola and Erkan, Selen and others},  
  journal={arXiv preprint arXiv:2505.04720},  
  year={2025}  
}
```