

1 We would like to thank all the reviewers for their careful reading and constructive suggestions.

2 To address a common question of Reviewer #3 and #5: as currently stated in the paper, Theorem 1 applies only to the
3 case when we have an upper bound on the target quality of distribution, and such a distribution exists. In the latest
4 revision of the paper, we additionally describe an extension of this result which does not require this knowledge. More
5 precisely, the algorithm we give is "semi-agnostic" – if OPT is the minimum total variation distance between the target
6 distribution and any of the hypotheses, it outputs a hypothesis which has distance $O(\text{OPT}) + \alpha$ from the target – at
7 the cost of additive terms which are generally lower order (i.e., the sample complexity n increases by an additive
8 $O(\log \log(1/\alpha)(1/\alpha^2 + \log^2(1/\alpha)/(\alpha\epsilon)))$). We will describe this result in the final version, together with a complete
9 proof in the supplementary material.

10 We will additionally be sure to address all of the detailed feedback from Reviewers 3 and 5, which we believe will
11 significantly improve the presentation of the paper. Regarding three specific comments:

- 12 • Reviewer #3's question about probability distributions applied to a set: the notation $P(W_1)$ stands for the
13 probability mass which distribution P applies to the set W_1 . This will be clarified in the next version.
- 14 • Reviewer #5's question about how error in p_1 and p_2 propagate in the analysis: It is sufficient to estimate
15 these quantities up to an additive $O(\alpha)$, which can be done with $O(1/\alpha^2)$ samples to each of the candidate
16 hypotheses. This will be rigorously argued in the next version.
- 17 • A near-linear time algorithm: While we made some attempts to derive a near-linear time algorithm, they
18 were roadblocked by a number of known lower bounds for canonical problems (e.g., lower bounds for top- k
19 selection). As a result, we consider this to be an interesting avenue for further study – we weakly conjecture
20 that there may be a deeper phenomenon at play, potentially including a trade-off between time and sample
21 complexity.