

Checklist

1. For all authors...
 - (a) Do the main claims made in the abstract and introduction accurately reflect the paper’s contributions and scope? [\[Yes\]](#)
 - (b) Did you describe the limitations of your work? [\[Yes\]](#) Our implementation is limited by existing processor architectures, which is discussed in section 6.1
 - (c) Did you discuss any potential negative societal impacts of your work? [\[No\]](#) We believe our method has no negative societal impacts.
 - (d) Have you read the ethics review guidelines and ensured that your paper conforms to them? [\[Yes\]](#)
2. If you are including theoretical results...
 - (a) Did you state the full set of assumptions of all theoretical results? [\[Yes\]](#) All assumptions are strictly stated.
 - (b) Did you include complete proofs of all theoretical results? [\[Yes\]](#) We provide complete and strict proofs in the supplementary.
3. If you ran experiments...
 - (a) Did you include the code, data, and instructions needed to reproduce the main experimental results (either in the supplemental material or as a URL)? [\[Yes\]](#) The data we used are all from public databases.
 - (b) Did you specify all the training details (e.g., data splits, hyperparameters, how they were chosen)? All these details are available in our paper and the appendix. Our source code and processed datasets are publicly available. [\[Yes\]](#)
 - (c) Did you report error bars (e.g., with respect to the random seed after running experiments multiple times)? Our accuracy evaluation in Table 2 are averaged over 5 different runs. [\[Yes\]](#)
 - (d) Did you include the total amount of compute and the type of resources used (e.g., type of GPUs, internal cluster, or cloud provider)? [\[Yes\]](#) Provided in supplementary.
4. If you are using existing assets (e.g., code, data, models) or curating/releasing new assets...
 - (a) If your work uses existing assets, did you cite the creators? [\[Yes\]](#) We discuss all the used datasets in the experiment section
 - (b) Did you mention the license of the assets? [\[Yes\]](#)
 - (c) Did you include any new assets either in the supplemental material or as a URL? [\[No\]](#)
 - (d) Did you discuss whether and how consent was obtained from people whose data you’re using/curating? [\[No\]](#) We use publicly available benchmark datasets.
 - (e) Did you discuss whether the data you are using/curating contains personally identifiable information or offensive content? [\[No\]](#) We use publicly available benchmark datasets.
5. If you used crowdsourcing or conducted research with human subjects...
 - (a) Did you include the full text of instructions given to participants and screenshots, if applicable? [\[N/A\]](#) We did not use crowdsourcing or conducted research with human subjects.
 - (b) Did you describe any potential participant risks, with links to Institutional Review Board (IRB) approvals, if applicable? [\[N/A\]](#) We did not use crowdsourcing or conducted research with human subjects.
 - (c) Did you include the estimated hourly wage paid to participants and the total amount spent on participant compensation? [\[N/A\]](#) We did not use crowdsourcing or conducted research with human subjects.