Bia Mitigation Comparison Report

Study: Bias Mitigation Method Comparison

The study is designed to systematically evaluate bias mitigation methods implemented by the user. After bias amplification through quantitative misrepresentation, mitigation methods are applied on these biased models and assessed by their effectiveness under different levels of bias.

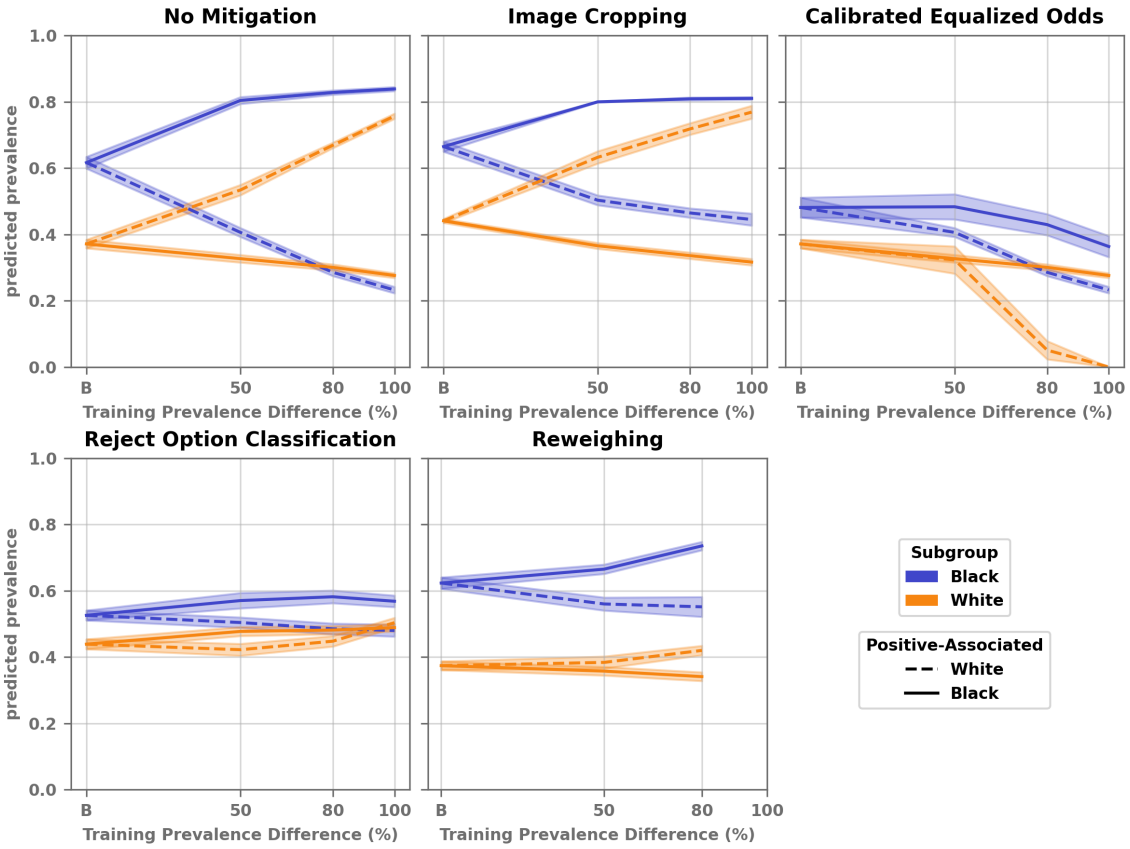
Bias Ampilification Approach: Quantitative Misrepresentation

The quantitative misrepresentation approach applies data selection prior to training so that the disease prevalence is different for different patient subgroups. Additional controls over the degree to which bias is amplified is taken by the amount of prevalence difference between subgroups.

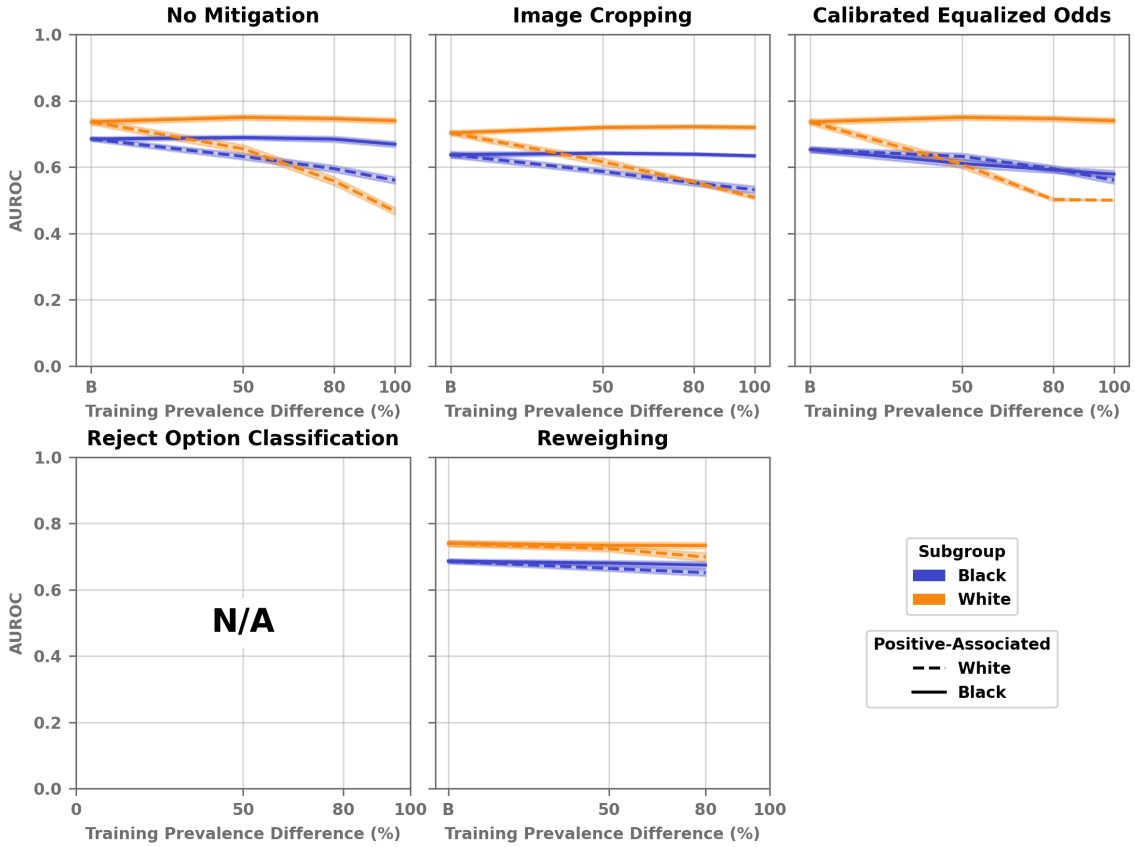
Results

Figures below present results for bias mitigation comparison. The first subplot presents the amplified bias (without mitigation), while the rest subplots show results from different implemented mitigation methods.For these experiments, the positive-associated subgroup refers to the subgroup with the higher disease prevalence in the training set. The x-axis indicates the subgroup disease prevelance difference in the training set, while B indicates the baseline model.

predicted prevalence



AUROC



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