

- a. In-order to increase demographic parity in the system, we can identify some key attributes in which instead of splitting the data solely on the current state information gain calculations that we can deduce with the training data that we have, we can force or design the model to calculate split values that improves demographic parity. For example if we are training a model that hires engineers for a specific company, the data that we have can likely be biased for white males due to historical demographic data. Instead of letting the model calculate split values on attributes related to demographic background solely based on current state information gain, we can calculate split values or intervals that do not decrease the chances of a positive output for any input based on that attribute.
- b. While trying to improve demographic parity, this approach may diminish the model's accuracy, and due to generalization or disregarding certain behavior in data, this approach may result in underfitting.