Machine learning is producing increase advantages in business values and efficiencies. However, we need to be alert of bias in machine learning models that are producing inequalities to large portions of the population. These bias models can target gender, race, age, income levels, … The effect can include lost opportunities for employment, financial services, housing, fair judicial system, …

Machine learning by default is bias, since it relies on statistical bias. This is required to make predictions, classifications, and correlations on new data the model has never seen before. However, focus needs to be put on the bias on the algorithms and training data used to create the models in the first place.

We will focus on From [research conducted by ProPublica](https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing), a non-profit research institution, it was found that COMPAS, a machine learning algorithm used to determine criminal defendants’ likelihood to recommit crimes.

We will:

* Identify the bias COMPASS
* Recreate the COMPASS model
* Create a new COMPASS model, by minimizing the bias.