

```
param_grids = {
    'LoRe': {
        'clf__C': [0.01, 0.1, 1, 10, 100],
        'clf__solver': ['liblinear', 'lbfgs']
    },
    'Dtree': {
        'clf__max_depth': [3, 5, 10, 15],
        'clf__min_samples_leaf': [10, 20, 50],
        'clf__min_samples_split': [20, 50, 100],
        'clf__criterion': ['gini', 'entropy']
    },
    'RaFo': {
        'clf__n_estimators': [100, 200, 500],
        'clf__max_depth': [5, 10],
        'clf__max_features': ['sqrt', 'log2']
    },
    'XGBo': {
        'clf__n_estimators': [500, 800, 1000],
        'clf__max_depth': [3, 4, 5],
        'clf__learning_rate': [0.01, 0.03, 0.05],

        'clf__min_child_weight': [1, 5, 10],
        'clf__gamma': [0.5, 1, 5],
        'clf__subsample': [0.6, 0.8],
        'clf__colsample_bytree': [0.6, 0.8],

        'clf__reg_alpha': [0, 0.1, 1],
        'clf__reg_lambda': [1, 5, 10],
    }
}
```