Notes:

# 

# Business Conclusions

## Summary

# Results Analysis

## Model Performance

Precision and Recall

In the table include: our model on the test set; our model on the production set; previous method on the production set;

Confusion matrix for both methods?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Test set (40% of the training set) | Production | Old method |
| Searches [% of total] | 29% | 30% | 100% |
| Precision | 0.5998 | 0.6005 | 0.359 |
| Recall | 0.5144 | 0.4942 | 1.0 |
| Accuracy | 0.7231 | 0.7004 | 0.359 |

## Fairness

Comparison of the discrimination level between our model and the current process for the feature *SubjectRaceCode* on training and production sets.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Precision score in the training set for feature *SubjectRaceCode* | | Precision score in the production set for feature *SubjectRaceCode* | |
|  | Current method | Our model | Current method | Our model |
| ‘White’ [%] | 34.68 | 61.99 | 36.75 | 60.48 |
| ‘Black’ [%] | 29.97 | 54.82 | 34.51 | 59.29 |
| ‘Asian/Pacific’ [%] | 29.11 | 54.76 | 26.09 | 57.14 |
| ‘Indian American’ [%] | 29.54 | 65.71 | 20.00 | 50.00 |
| Max. difference [p.p.] | 5.58 | 10.95 | 16.75 | 10.48 |
| Max. difference [%] | 16.05 | 16.67 | 45.58 | 17.32 |
| Std. Deviation [p.p.] | 2.59 | 5.45 | 7.73 | 4.69 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Precision score in the training set for feature *SubjectEthnicityCode* | | Precision score in the production set for feature *SubjectEthnicityCode* | |
|  | Current method | Our model | Current method | Our model |
| ‘Not applicable’ [%] | 34.99 | 60.64 | 37.98 | 61.38 |
| ‘Hispanic’ [%] | 27.71 | 57.64 | 29.84 | 55.75 |
| ‘Middle Eastern’ [%] | 27.97 | 50.00 | n.a. | n.a. |
| Max. difference [p.p.] | 7.28 | 10.64 | 8.14 | 5.63 |
| Max. difference [%] | 20.82 | 17.55 | 21.43 | 9.18 |
| Std. Deviation [p.p.] | 4.13 | 5.48 | 5.76 | 3.98 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Precision score in the training set for feature *SubjectSexCode* | | Precision score in the production set for feature *SubjectSexCode* | |
|  | Current method | Our model | Current method | Our model |
| ‘Male’ [%] | 33.54 | 59.73 | 36.97 | 60.55 |
| ‘Female’ [%] | 31.96 | 61.13 | 31.87 | 58.20 |
| Max. difference [p.p.] | 1.57 | 1.40 | 5.10 | 2.35 |
| Max. difference [%] | 4.70 | 2.29 | 13.80 | 3.88 |
| Std. Deviation [p.p.] | 1.11 | 0.99 | 3.61 | 1.66 |

## Population Analysis

# Next Steps

# Deployment Issues

## Re-deployment

## Unexpected problems

## What would you do differently next time