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O'ZBEKISTON RESPUBLIKASI RAQAMLI  
TEXNOLOGIYALAR VAZIRLIGI

# ZEROLoss

CBU CODING CHALLENGE

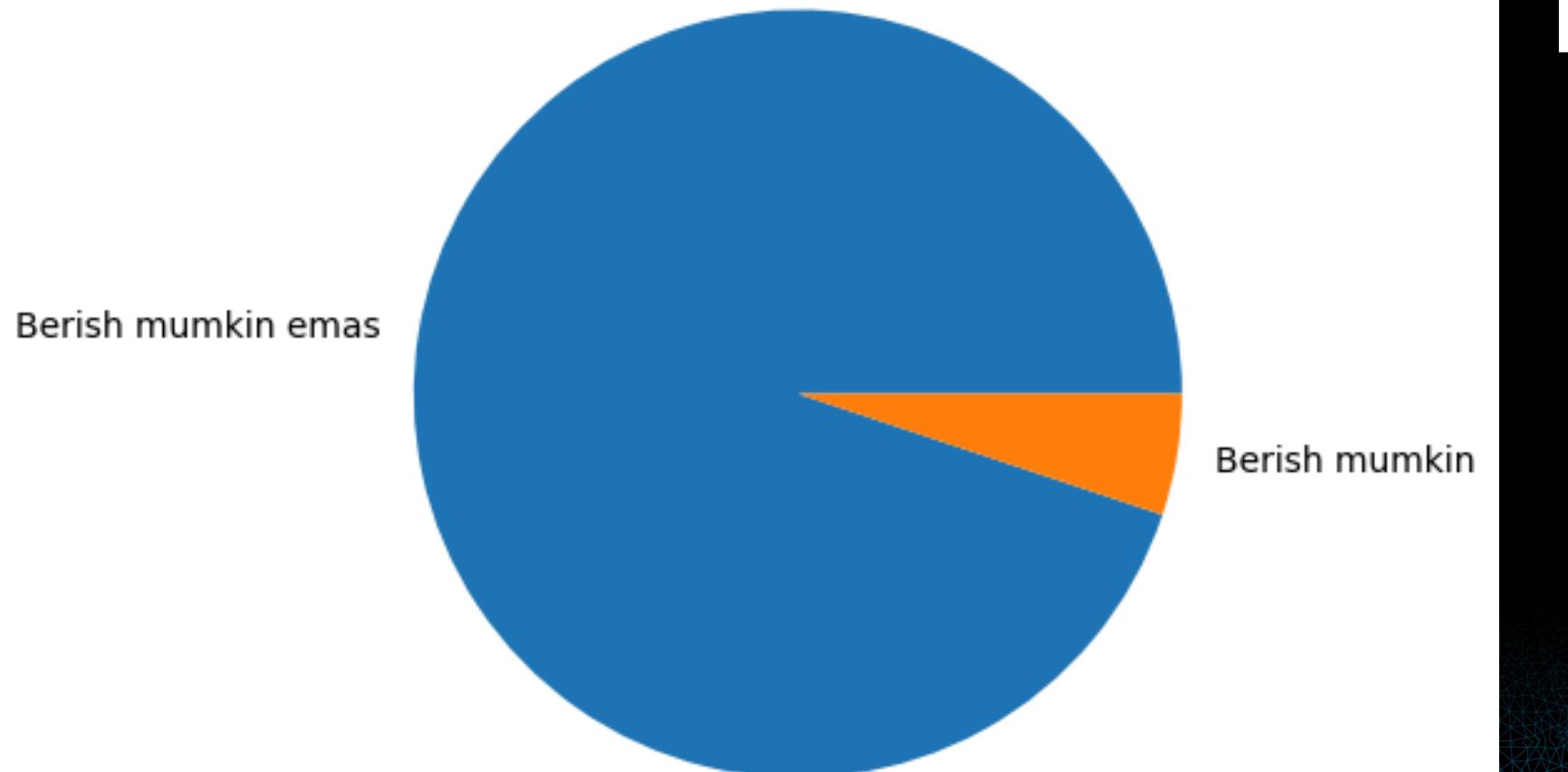


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Kredit berish



# ASOSIY MUAMMOLAR

1. Ma'lumotlarimizni targetidagi ustun imbalansligi
2. 0 label uchun 85405 ta, 1 label uchun esa 4594 ta ma'lumotlar
3. Ma'lumotlaridagi korrelatsiya ko'p ustunlarda judayam past



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# YECHIMLAR

Ma'lumotlarimiz imbalans bo'lganligi bois klassik ML modellaridan RandomForest, SVM lardan class\_weight='balanced' attributi orqali o'qitib ko'rdik

SMOTE texnikasi yordamida ma'lumotlarimiz labellarini tenglashtirdik

Yuqoridagi usullar samarali yechim bermagandan keyin 0 labellarimizni kamaytirib 1 labellarimizga tenglashtirdik va eng yaxshi natijani oldik

1

2

3

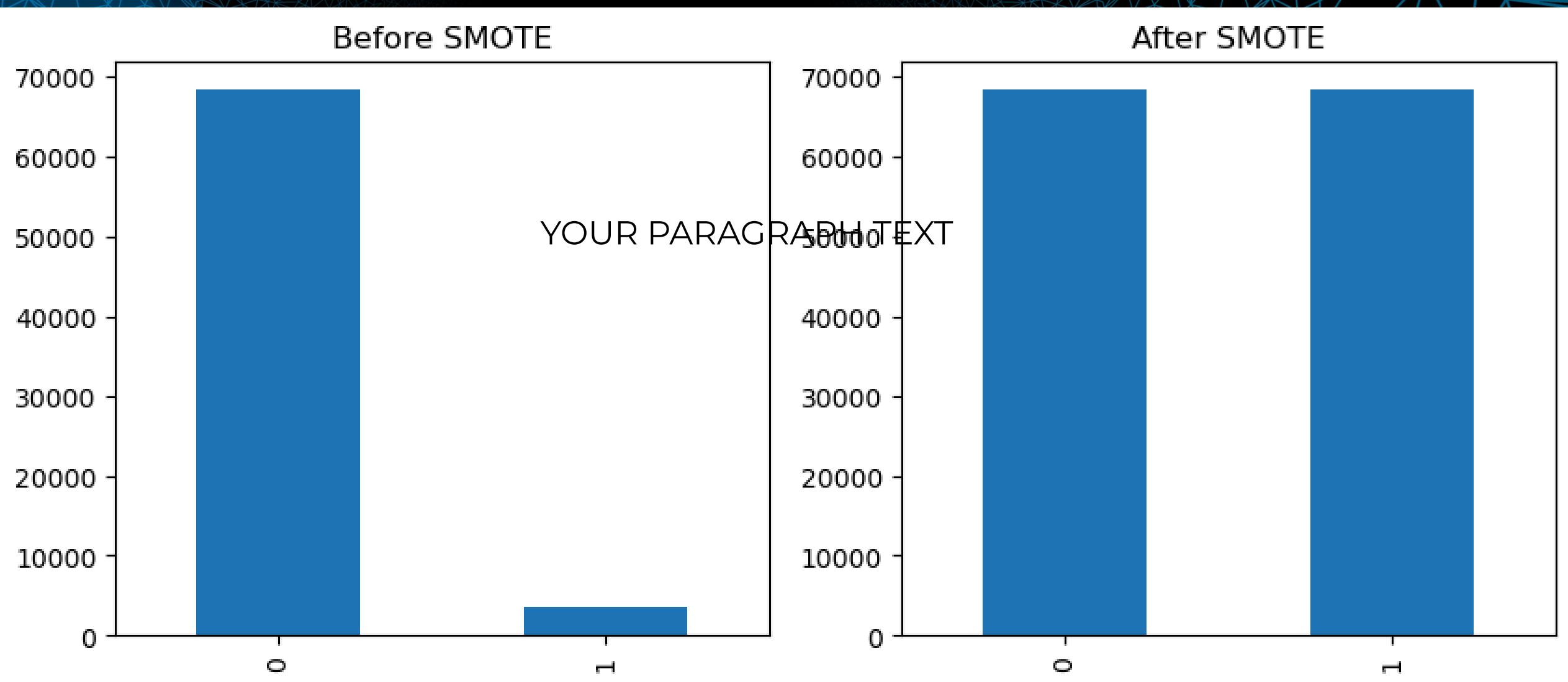


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```
FROM imblearn.over_sampling import SMOTE  
sm = SMOTE(random_state=42)  
X_train_res, y_train_res = sm.fit_resample(X_train, y_train)
```





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# NATIJALAR

LABELLAR TENGLANGANDAN KEYINGI NATIJA

SMOTE UCHUN

== RandomForest Train Classification Report ==				
	precision	recall	f1-score	support
0	0.96	0.92	0.94	17081
1	0.18	0.32	0.23	919
accuracy			0.89	18000
macro avg	0.57	0.62	0.58	18000
weighted avg	0.92	0.89	0.90	18000

Test Accuracy: 0.7116430903155604

Test ROC AUC: 0.786871522601683

Confusion Matrix:

```
[[672 247]
 [283 636]]
```

Classification Report:

	precision	recall	f1-score	support
0	0.70	0.73	0.72	919
1	0.72	0.69	0.71	919
accuracy			0.71	1838
macro avg	0.71	0.71	0.71	1838
weighted avg	0.71	0.71	0.71	1838