

CBU CODING CHALLENGE

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Data Cleaning

Hamma sonli qator ma'lumotlari float formatga parse qilindi.

Quyidagi columnlar olib tashlandi:

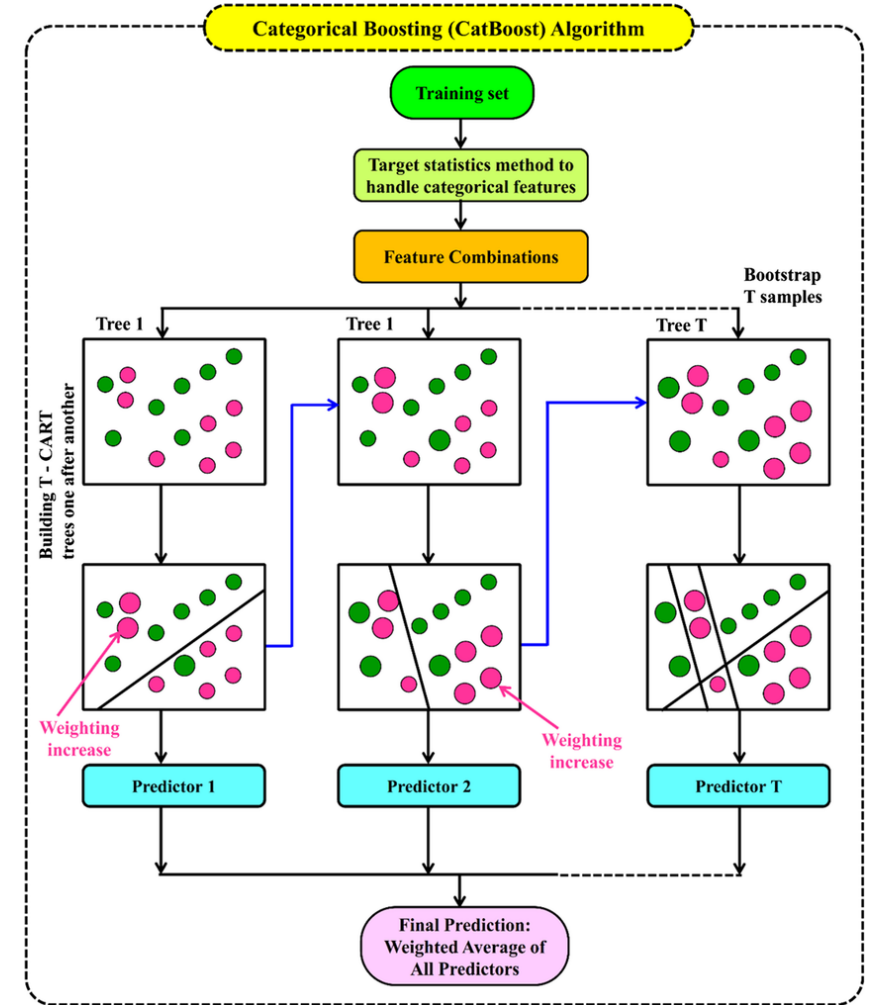
cust_id, customer_number,
cust_num, previous_zip_code, state,
marketing_campaign, loan_officer_id,
num_login_sessions,
application_hour,
total_monthly_debt_payment, credit_usage_amount, num
_credit_accounts,
oldest_account_age_months, cost_of_living_index, tot
al_monthly_debt_payment,

Dastlab Random Forest modeli tanlandi.

- ❑ One-hot encoding → feature sonini juda ko'paytiradi
- ❑ Target encoding → leakage xavfi
- ❑ LabelEncoder → ordinal yaroqsiz

So'ng yechim uchun CatBoost tanlandi.

- ❑ One-hot / Label encoding talab qilmaydi
- ❑ Overfittingga bardoshli
- ❑ Feature importance ishonchli



✓ Optimization completed!
Best ROC-AUC: 0.8006

📊 Best Parameters:

iterations	: 688
learning_rate	: 0.07671067229712569
depth	: 4
l2_leaf_reg	: 1.8585411871647346
min_data_in_leaf	: 26
border_count	: 197
bagging_temperature	: 0.17150201140489996
random_strength	: 8.738456430998188
class_1_weight	: 18

🔄 STEP 6: Cross-Validation Training

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Fold 1: ROC-AUC =	0.7644
Fold 2: ROC-AUC =	0.8008
Fold 3: ROC-AUC =	0.7863
Fold 4: ROC-AUC =	0.7839
Fold 5: ROC-AUC =	0.8079
...	
account_diversity_index	3.683759
regional_median_rent	3.558911
total_monthly_debt_payment	3.339052
regional_unemployment_rate	3.024365

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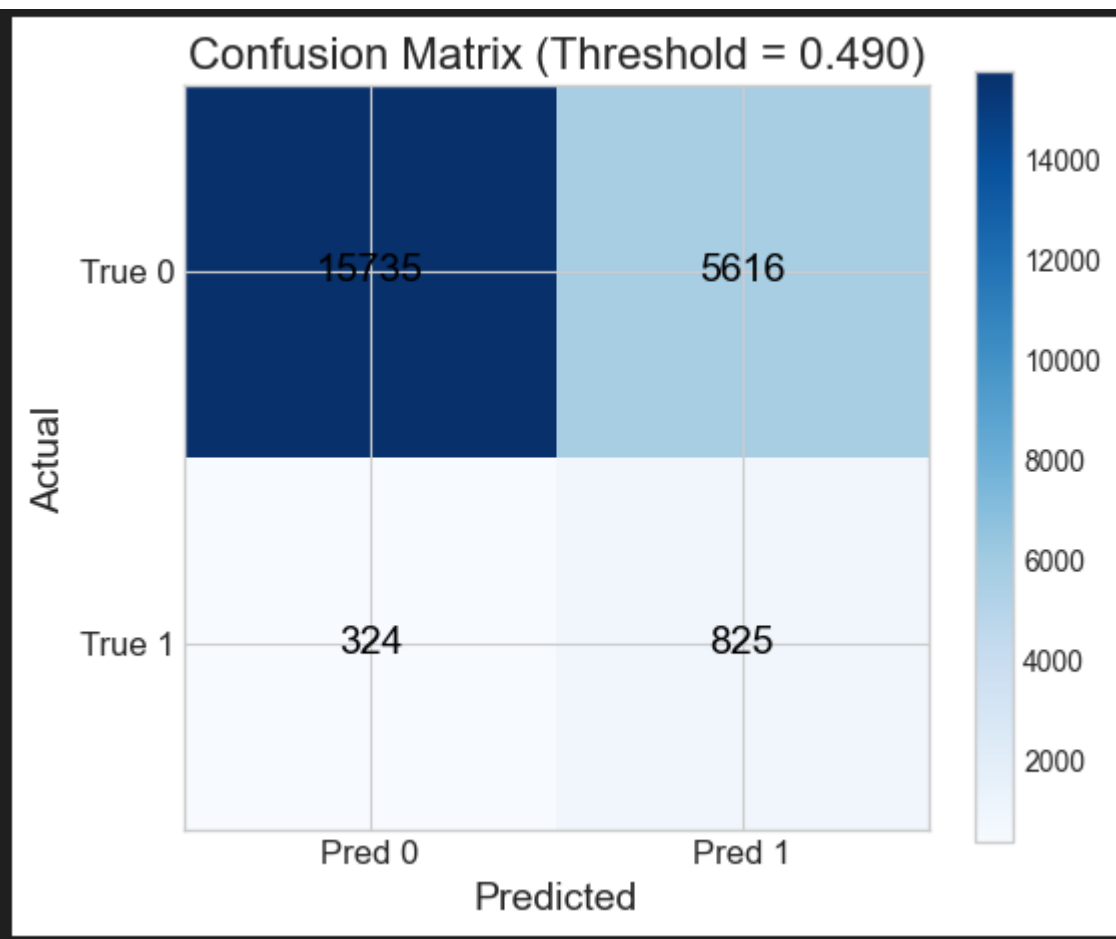
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Top 15 Feature Importances

