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1 /System/Volumes/Data/Users/liangwenlong/envs/ml_env
  /bin/python3.12 /Users/liangwenlong/study/bme/3/
  ml_usage/project/solutionv2.py
2 正在读取数据...
3 正在进行特征工程 V2...
4 使用的特征数量: 64
5     识别到的类别特征 (将被特殊处理): ['deviceuniquecode
  ', 'driver_name_and_id', 'vehicle_type', '
  vehicle_motortype', 'env_relative_humidity', '
  vehicle_type_1', 'vehicle_type_2', 'vehicle_type_3
  ', 'vehicle_type_4', 'vehicle_type_5', '
  vehicle_type_6']
6 开始训练 LightGBM (CV=5, Max Rounds=10000)...
7 Training until validation scores don't improve for
  300 rounds
8 [1000]  valid_0's rmse: 0.236547
9 [2000]  valid_0's rmse: 0.235211
10 [3000]  valid_0's rmse: 0.234764
11 [4000]  valid_0's rmse: 0.234503
12 [5000]  valid_0's rmse: 0.234281
13 [6000]  valid_0's rmse: 0.234183
14 Early stopping, best iteration is:
15 [5845]  valid_0's rmse: 0.23415
16 Fold 1 RMSE: 31.5160
17 Training until validation scores don't improve for
  300 rounds
18 [1000]  valid_0's rmse: 0.242109
19 Early stopping, best iteration is:
20 [1352]  valid_0's rmse: 0.241504
21 Fold 2 RMSE: 33.6476
22 Training until validation scores don't improve for
  300 rounds
23 [1000]  valid_0's rmse: 0.238678
24 [2000]  valid_0's rmse: 0.238246
25 Early stopping, best iteration is:
26 [1736]  valid_0's rmse: 0.238201
27 Fold 3 RMSE: 33.2842
28 Training until validation scores don't improve for
  300 rounds
29 [1000]  valid_0's rmse: 0.240002
30 Early stopping, best iteration is:
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31 [1458] valid_0's rmse: 0.239337
32 Fold 4 RMSE: 33.5338
33 Training until validation scores don't improve for
    300 rounds
34 [1000] valid_0's rmse: 0.238149
35 [2000] valid_0's rmse: 0.237373
36 [3000] valid_0's rmse: 0.237076
37 Early stopping, best iteration is:
38 [3504] valid_0's rmse: 0.23689
39 Fold 5 RMSE: 33.1833
40
41 =====
42     V2版本 平均 RMSE: 33.0330
43 =====
44 提交文件已生成: submission_v2_log_rmse_33.0330.csv
45
46 进程已结束, 退出代码为 0
47
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