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1 /System/Volumes/Data/Users/liangwenlong/envs/ml_env
  /bin/python3.12 /Users/liangwenlong/study/bme/3/
  ml_usage/project/solutionv5.3.py
2 正在读取数据...
3 正在构建特征 (V5.3 - Regularized)...
4 使用的特征数: 62
5 开始训练 LightGBM (V5.3 Regularized)...
6 Training until validation scores don't improve for
  300 rounds
7 [1000]  valid_0's l1: 19.4773
8 [2000]  valid_0's l1: 19.139
9 [3000]  valid_0's l1: 18.9936
10 [4000]  valid_0's l1: 18.9039
11 [5000]  valid_0's l1: 18.8393
12 [6000]  valid_0's l1: 18.7953
13 [7000]  valid_0's l1: 18.7585
14 [8000]  valid_0's l1: 18.7297
15 [9000]  valid_0's l1: 18.7085
16 [10000] valid_0's l1: 18.6929
17 Did not meet early stopping. Best iteration is:
18 [9911]  valid_0's l1: 18.6927
19 Fold 1 MAE: 18.6927
20 Training until validation scores don't improve for
  300 rounds
21 [1000]  valid_0's l1: 19.7558
22 [2000]  valid_0's l1: 19.4495
23 [3000]  valid_0's l1: 19.2978
24 [4000]  valid_0's l1: 19.2108
25 [5000]  valid_0's l1: 19.1529
26 [6000]  valid_0's l1: 19.107
27 [7000]  valid_0's l1: 19.0796
28 [8000]  valid_0's l1: 19.0518
29 [9000]  valid_0's l1: 19.0312
30 [10000] valid_0's l1: 19.0195
31 Did not meet early stopping. Best iteration is:
32 [10000] valid_0's l1: 19.0195
33 Fold 2 MAE: 19.0195
34 Training until validation scores don't improve for
  300 rounds
35 [1000]  valid_0's l1: 19.774
36 [2000]  valid_0's l1: 19.4433
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37 [3000] valid_0's l1: 19.2941
38 [4000] valid_0's l1: 19.2122
39 [5000] valid_0's l1: 19.1582
40 [6000] valid_0's l1: 19.1161
41 [7000] valid_0's l1: 19.0892
42 [8000] valid_0's l1: 19.0694
43 [9000] valid_0's l1: 19.0457
44 [10000] valid_0's l1: 19.0271
45 Did not meet early stopping. Best iteration is:
46 [9956] valid_0's l1: 19.0268
47 Fold 3 MAE: 19.0268
48 Training until validation scores don't improve for
   300 rounds
49 [1000] valid_0's l1: 19.7411
50 [2000] valid_0's l1: 19.3892
51 [3000] valid_0's l1: 19.2391
52 [4000] valid_0's l1: 19.1551
53 [5000] valid_0's l1: 19.0915
54 [6000] valid_0's l1: 19.0522
55 [7000] valid_0's l1: 19.0226
56 [8000] valid_0's l1: 18.9921
57 [9000] valid_0's l1: 18.9676
58 [10000] valid_0's l1: 18.9492
59 Did not meet early stopping. Best iteration is:
60 [9988] valid_0's l1: 18.9491
61 Fold 4 MAE: 18.9491
62 Training until validation scores don't improve for
   300 rounds
63 [1000] valid_0's l1: 19.7407
64 [2000] valid_0's l1: 19.4236
65 [3000] valid_0's l1: 19.2758
66 [4000] valid_0's l1: 19.1995
67 [5000] valid_0's l1: 19.1465
68 [6000] valid_0's l1: 19.0976
69 [7000] valid_0's l1: 19.0645
70 [8000] valid_0's l1: 19.0396
71 [9000] valid_0's l1: 19.0207
72 [10000] valid_0's l1: 18.9996
73 Did not meet early stopping. Best iteration is:
74 [9997] valid_0's l1: 18.9996
75 Fold 5 MAE: 18.9996
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76
77 =====
78     V5.3（正则化版）平均 MAE: 18.9375
79 =====
80 提交文件已生成: submission_v5_3_reg_mae_18.9375.csv
81
82 进程已结束，退出代码为 0
83
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