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1 C:\Users\270708326\PycharmProjects\PythonProject\Sentiment\.venv\Scripts\python.exe C:\Users\
  270708326\PycharmProjects\PythonProject\Sentiment\visualization_dashboard.py
2 Loading processed data...
3 Loaded 9386 reviews
4
5 =====
6 GENERATING ALL VISUALIZATIONS
7 =====
8
9 Loading ML results from ml_results.pkl...
10 ML results loaded successfully!
11
12 Creating Executive Dashboard...
13 Dashboard saved as 'executive_dashboard.html'
14
15 Creating Sentiment Trends...
16 Saved as 'sentiment_trends.png'
17
18 Creating Word Clouds...
19 Saved as 'wordclouds.png'
20
21 Creating Interactive Timeline with Last Year Analysis...
22   Full dataset: 9386 reviews
23   Last year (2024-09-22 to 2025-09-22 00:00:00): 321 reviews
24 Saved as 'interactive_timeline.html'
25
26 =====
27 LAST YEAR SUMMARY (App Version Analysis)
28 =====
29
30 Period: 2024-09-22 to 2025-09-22 00:00:00
31 Total Reviews: 321
32
33 Top 5 App Versions by Review Count:
34 appVersion
35 7.3.1      60
36 7.4.0      57
37 7.3.3      36
38 7.3.0      34
39 7.5.0      28
40 Name: count, dtype: int64
41
42 App Version Ratings (Last Year):
43 appVersion  avg_rating  review_count
44      7.3.0      2.264706             34
45      7.3.1      1.966667             60
46      7.3.2      2.266667             15
47      7.3.3      2.611111             36
48      7.4.0      2.614035             57
49      7.5.0      2.250000             28
50      7.5.1      2.875000             16
51
52 Top Issues by Version (% of Negative Reviews):
53 issue      App Performance  ...  Network/Connection
54 version      ...
55 7.0.2          14.3  ...          0.0
56 7.3.0           9.1  ...          0.0
57 7.3.1          21.7  ...          0.0
58 7.3.2          20.0  ...          0.0
59 7.3.3          19.0  ...          4.8
60 7.4.0          18.8  ...          0.0
61 7.5.0          15.8  ...         10.5
62 7.5.1          12.5  ...          0.0
63
64 [8 rows x 7 columns]
65 =====
66
67 Creating App Version Analysis...
68 Saved as 'version_analysis.png'
```

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69
70 Creating Response Impact Analysis...
71
72     Response Time Statistics:
73         Median: 0.7 days (16.7 hours)
74         Mean: -23.4 days (-561.3 hours)
75         Min: -3557.3 days
76         Max: 41.5 days
77 Saved as 'response_analysis.png'
78
79 Creating Issue Breakdown...
80 Saved as 'issue_breakdown.png'
81
82 =====
83 GENERATING ML MODEL VISUALIZATIONS
84 =====
85
86 Creating Model Comparison Chart...
87 Saved as 'model_comparison.png'
88
89 Best performing model: SVM
90
91 Creating Confusion Matrix for SVM...
92 Saved as 'confusion_matrix.png'
93
94 =====
95 ALL VISUALIZATIONS GENERATED SUCCESSFULLY!
96 =====
97
98 Generated Files:
99 1. executive_dashboard.html
100 2. sentiment_trends.png
101 3. wordclouds.png
102 4. interactive_timeline.html
103 5. version_analysis.png
104 6. response_analysis.png
105 7. issue_breakdown.png
106 8. model_comparison.png
107 9. confusion_matrix.png
108
109 =====
110 VISUALIZATION PIPELINE COMPLETE!
111 =====
112
113 Process finished with exit code 0
114
```