

Steam Gaming Analytics Pipeline

Data Flow

Collection: Real-time player counts and review data from Steam Web API

Processing: Local LLM sentiment analysis using CardiffNLP RoBERTa model

Orchestration: Airflow workflow management for monitoring and quality assurance

Storage: PostgreSQL database with optimized schemas for time-series analysis

Visualization: Power BI DirectQuery and Import modes for operational and analytical reporting

Business Value

Demonstrates end-to-end data engineering capabilities including A PI integration, containerized microservices, ML processing, workflow orchestration, and executive-ready business intelligence.

Technical Stack

Python | Docker | PostgreSQL | Apache Airflow | Hugging Face Transformers | Power BI

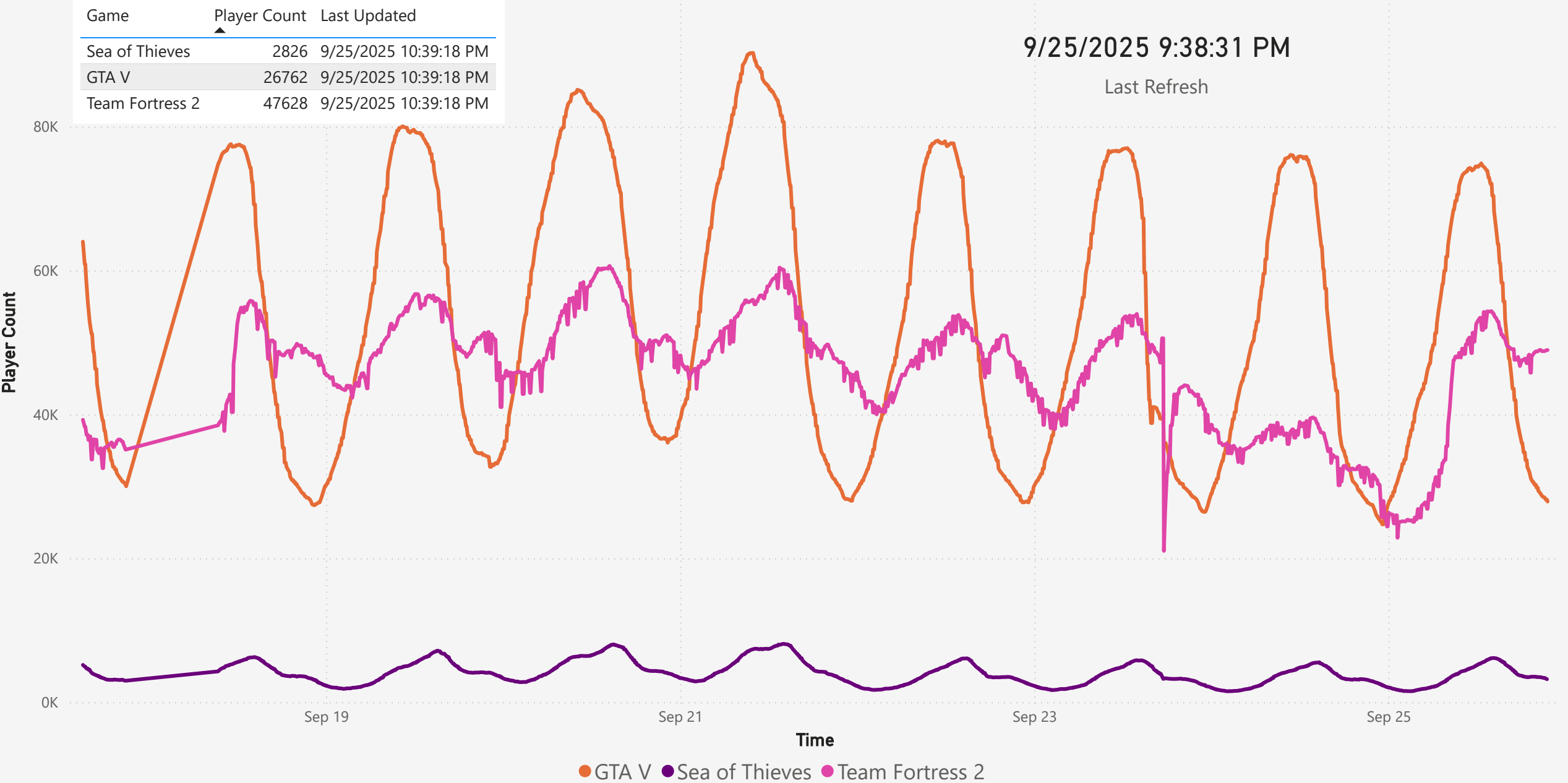
Steam Gaming Analytics - Live Dashboard

Real-time Player Monitoring & Competitive Intelligence

9/25/2025 9:38:31 PM

Last Refresh

Game	Player Count	Last Updated
Sea of Thieves	2826	9/25/2025 10:39:18 PM
GTA V	26762	9/25/2025 10:39:18 PM
Team Fortress 2	47628	9/25/2025 10:39:18 PM



Global Gaming Activity Analysis 9/18/25 - 9/25/25

10 AM - 11 AM CST

GTA V Peak Window

Average Player Count

Hour Label	GTA V	Sea of Thieves	Team Fortress 2
00:00	32849.56	2355.89	41016.79
01:00	36362.40	2131.90	39667.56
02:00	40970.27	2019.58	39257.88
03:00	46235.60	2128.95	39493.69
04:00	51240.86	2366.14	40730.36
05:00	55712.01	2652.71	41715.43
06:00	61104.67	3023.56	43963.61
07:00	67781.43	3611.26	45673.44
08:00	74151.21	4286.19	48248.06
09:00	78146.41	4822.16	48945.87
10:00	79228.85	5155.01	49385.09
11:00	78840.10	5423.18	50569.19
12:00	76772.21	5806.34	53123.30
13:00	76019.54	6262.75	53717.92
14:00	70998.65	6530.18	53224.11
15:00	60460.80	6044.22	49881.68
16:00	51284.81	5071.44	47630.22
17:00	43247.45	4356.41	43793.67
18:00	37193.50	3824.41	43733.73
19:00	33506.96	3674.78	44621.00
20:00	31719.94	3611.13	45086.11
21:00	29736.44	3386.45	44367.39
22:00	29514.74	3156.29	44742.77
23:00	30075.46	2729.27	41745.04

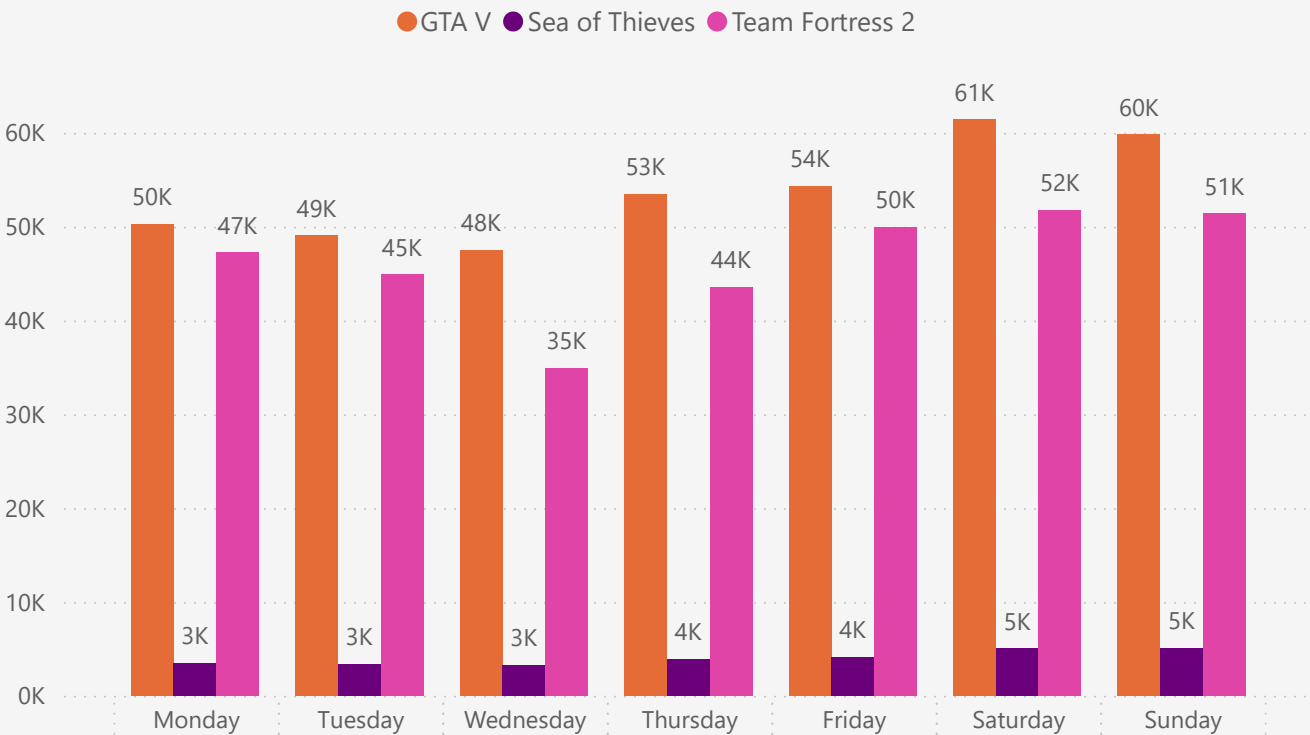
2 PM - 3 PM CST

Sea of Thieves Peak Window

1 PM - 2 PM CST

Team Fortress 2 Peak Window

Average Player Count During Day



Global gaming patterns reveal timezone-distributed activity: apparent 'morning' peaks for GTA V (10-11 AM CST) represent peak hours across multiple global regions. Weekly engagement shows a Thursday-Sunday trend, with activity building toward weekends - GTA V peaks on weekends (61K players), while Sea of Thieves and Team Fortress 2 maintain more consistent patterns. Each game serves distinct global audiences with different temporal preferences.

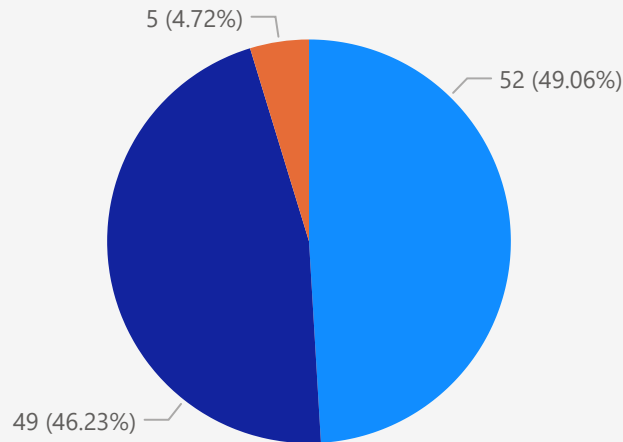
Community Sentiment Analysis

GTA V

0.04

Average Sentiment Score

GTA V

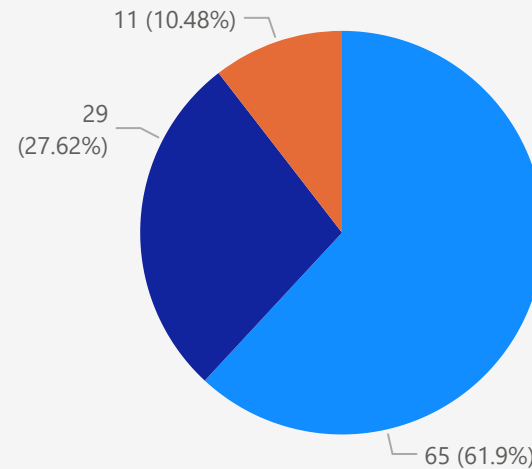


Team Fortress 2

0.31

Average Sentiment Score

Team Fortress 2

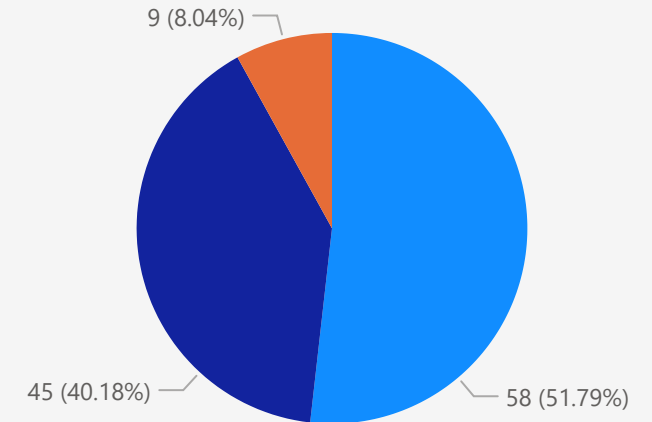


Sea of Thieves

0.12

Average Sentiment Score

Sea of Thieves



Sentiment ● positive ● negative ● neutral

Sentiment Analysis employs a local Large Language Model (CardiffNLP Twitter-RoBERTa) to analyze community reviews on a scale of -1 (most negative) to +1 (most positive). Team Fortress 2 leads with 0.31 average sentiment and 62% positive reviews, indicating strong community satisfaction. Sea of Thieves shows moderate positive sentiment (0.12) with 52% positive reviews. GTA V demonstrates neutral community health (0.04) with balanced positive/negative distribution, suggesting mixed player experiences.