Real-Time Toxicity Detection and Management in Video Gaming: A Comprehensive Data-Driven Approach

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SHUT DOWN!
G-SYNC
3D VISION

Motivation

Decreased Communication Efficiency

Reduced Team Morale and Satisfaction

Hindered Creativity and Innovation

- A Worse Player Experience
- Higher Player Churn Rates

Decreased Communication Efficiency

Toxic communication severely impacts **team efficiency and collaboration**. Negativ interactions can **slow down decision-making processes** and lead to misunderstandings or overlooking of critical information.

Reduced Team Morale and Satisfaction

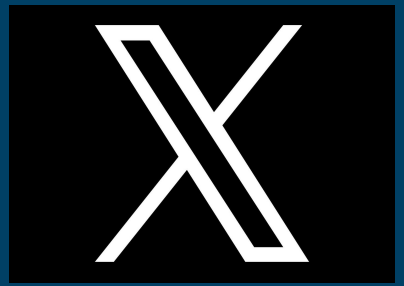
A toxic environment negatively affects team morale. This can **harm performance**, **alienate players**, and lead to **lower enjoyment and retention**

Hindered Creativity and Innovation

In a negative atmosphere, team members may **hesitate to share ideas or strategies** for **fear of criticism** or negative feedback, limiting the team's **creative and innovative potential**.

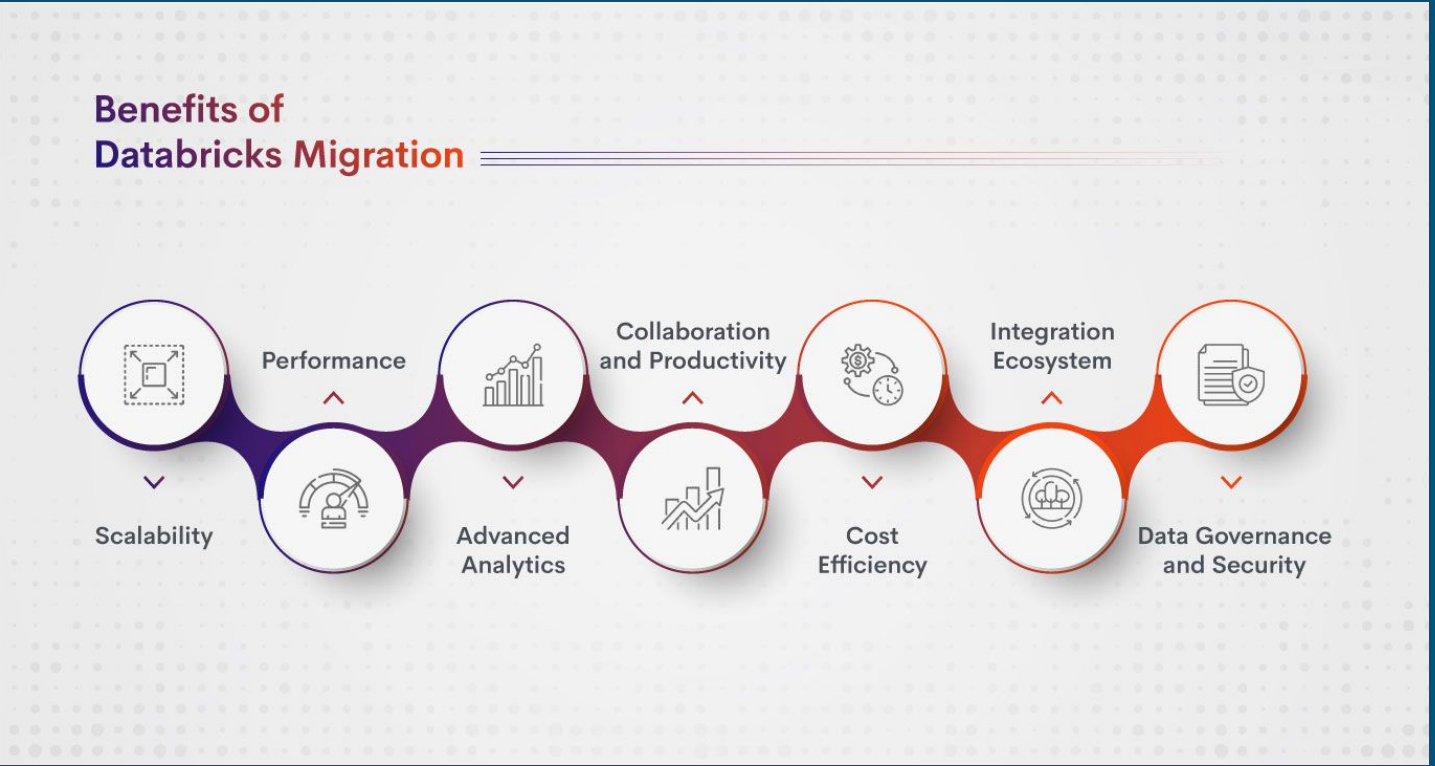
USE CASE #1 Video Games

USE CASE #2 Social Media



USE CASE #3 Internal Communications

Why Databricks?



Demo: Toxicity Chat Detection on Databricks

Training Data

Surge AI toxic & non-toxic labeled comments from social media platforms

1 **Load Data**

surge AI

databricks

2 **Data Ingestion**

DELTA LAKE

3 **Build NLP model**

Spark

John Snow LABS

4 **Model Deployment**

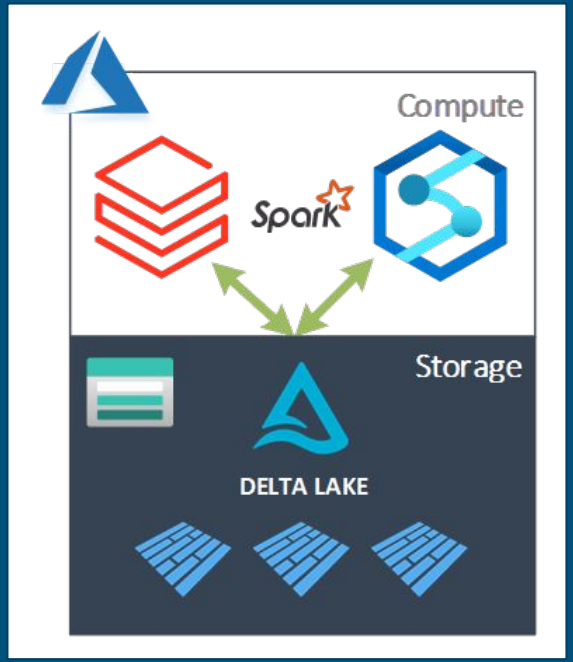
mlflow

Toxicity Chat Classification

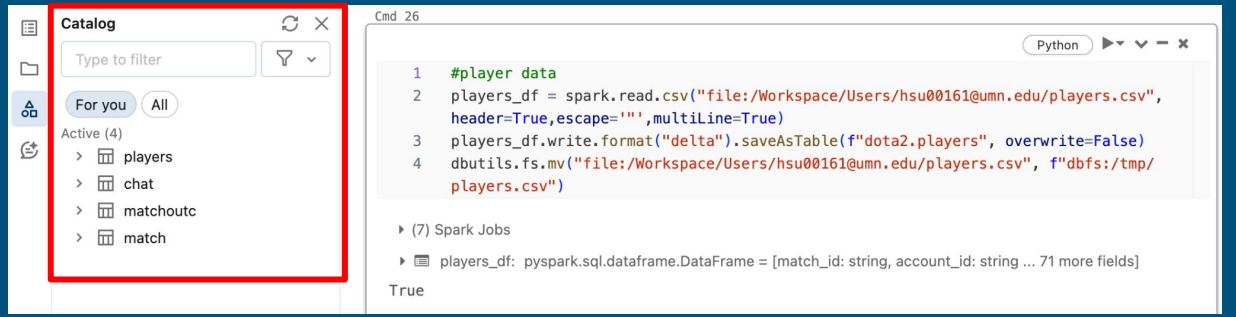
Application

Classify toxicity of 144k Dota 2 gaming chat message

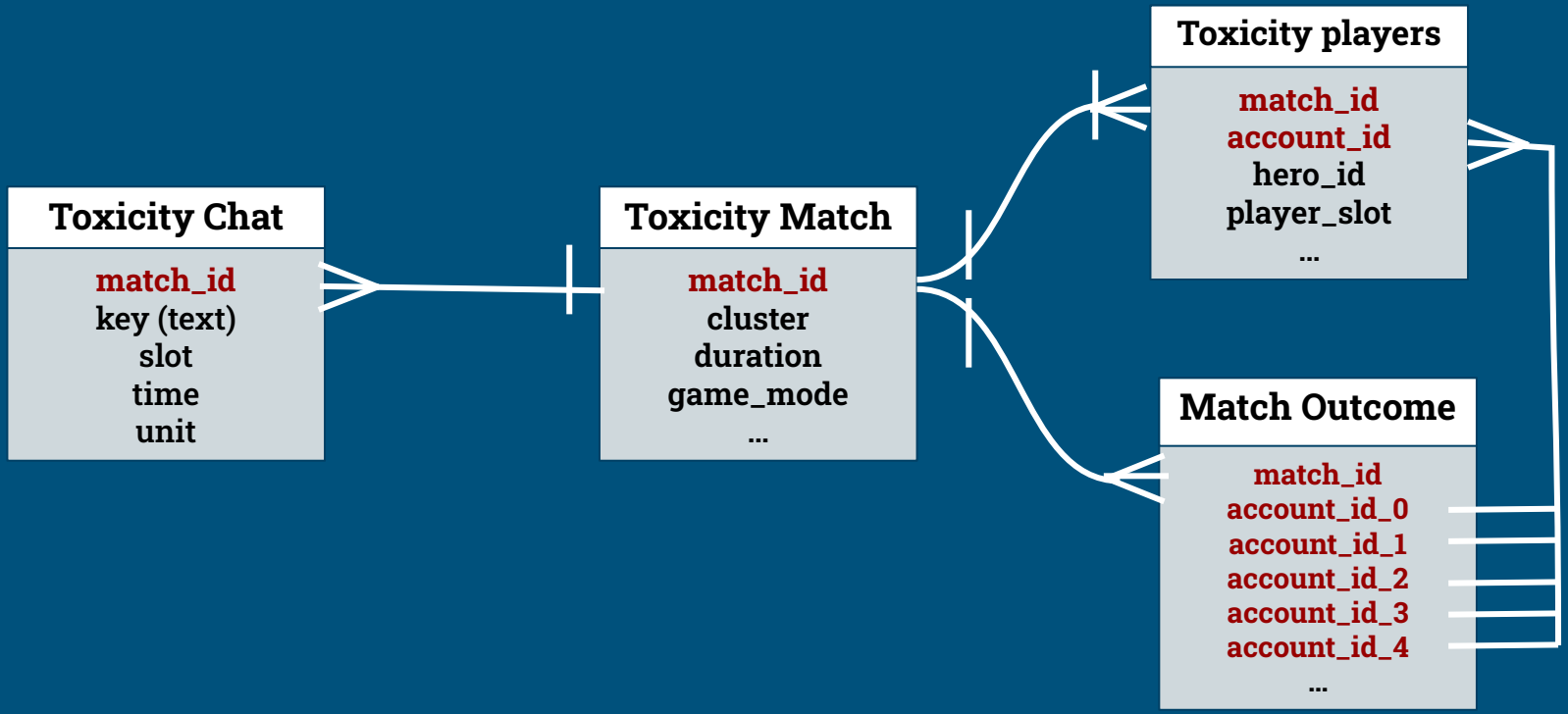
Visit Databricks Delta Lake



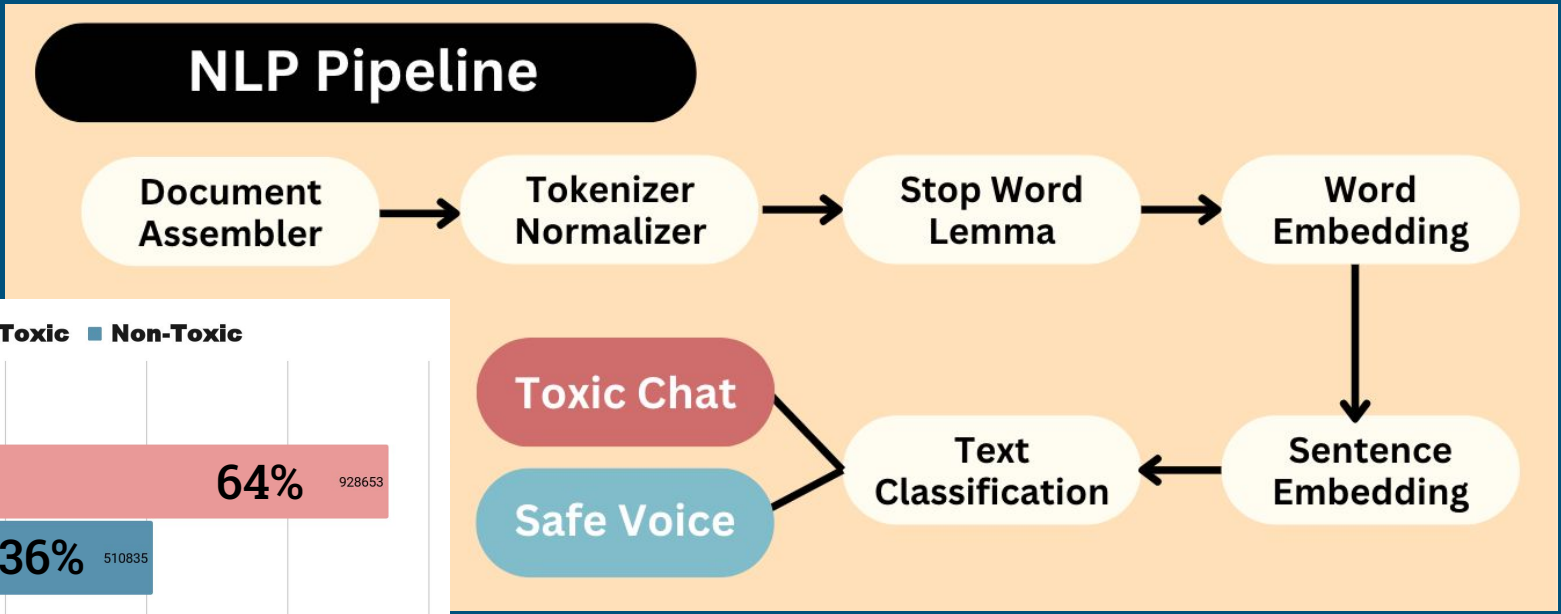
We leverage Databricks Delta Lake for **data ingestion**.
We are able to build **Lakehouse architecture** after the importing the data from existing storage system (S3, HDFS)



Dota 2 Delta Lake Table Diagram



Build NLP Model with John Snow Lab



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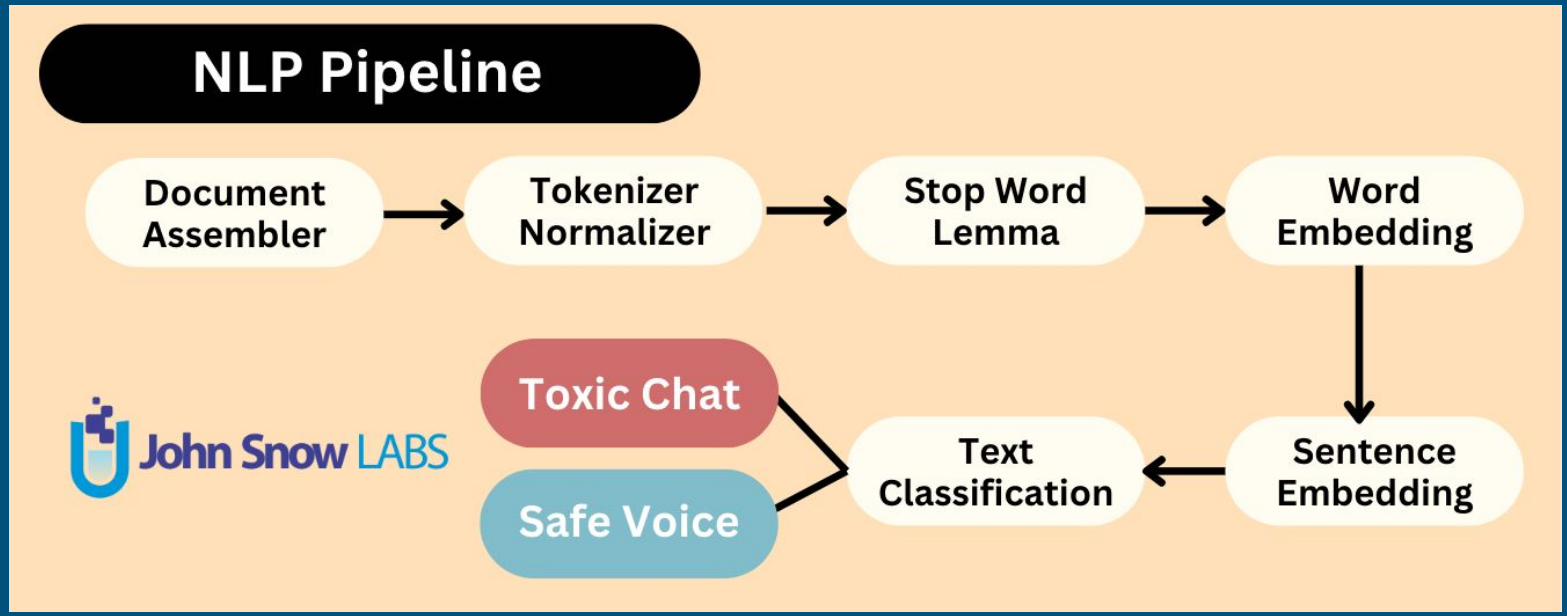
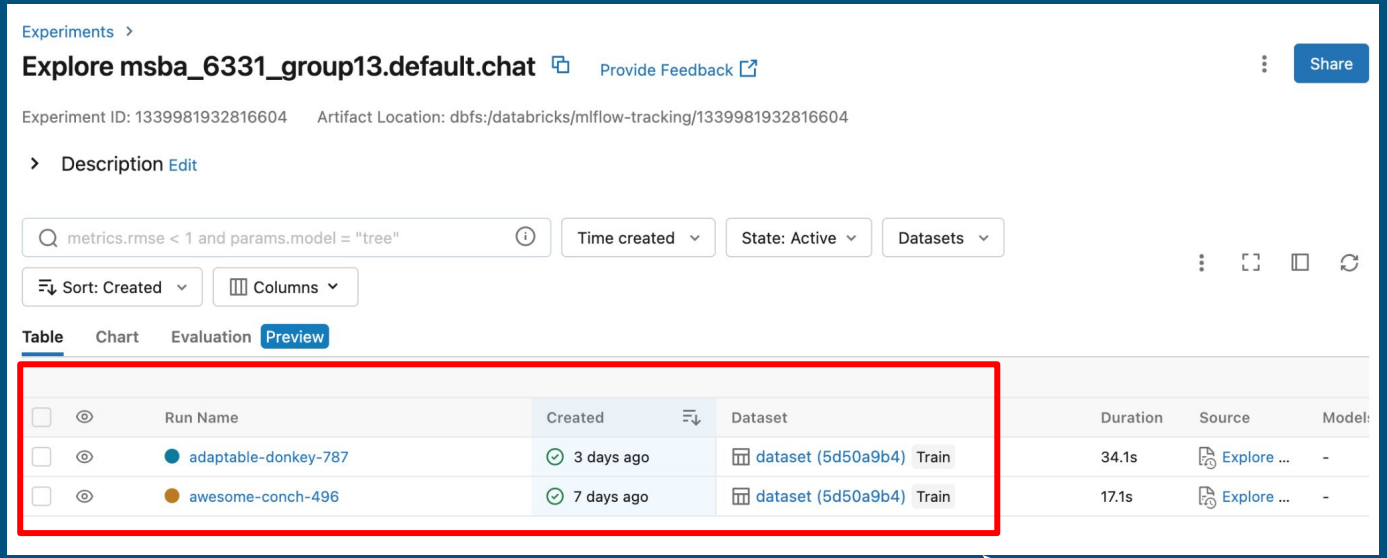
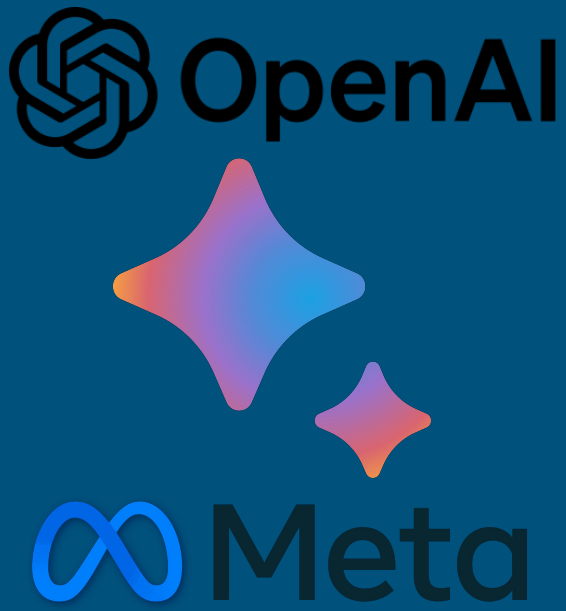


Develop and Track Model with MLflow



Run experiment with any ML library, framework or language, and automatically **keep track of parameters, metrics and code for experiments**

The Future of Toxicity Detection



Generative AI holds potential, despite the computational cost:

- Predict what players will say, before they say it
- Synthetic data
- Automatic labeling of training data
- Use of AI to label in real time, instead of a specific, trained model

Thank You!