



# FROM XGBOOST TO GPT

2010 - 2025

# INTRODUCTION

This project investigates the evolution of Artificial Intelligence practices within the Kaggle competition ecosystem. By analyzing evaluation metrics and AI-related tags, we observed how themes like computer vision, NLP, and deep learning have evolved. Although source code was not accessible, structured metadata still provides a valuable lens into this transformation.



# DATASET USED:

Meta Kaggle Dataset



Competition metadata (name, launch date, evaluation metric)

Tags and categorization for each competition

Voting data and participation history

Kernel metadata (excluding source code)

# METHODOLOGY

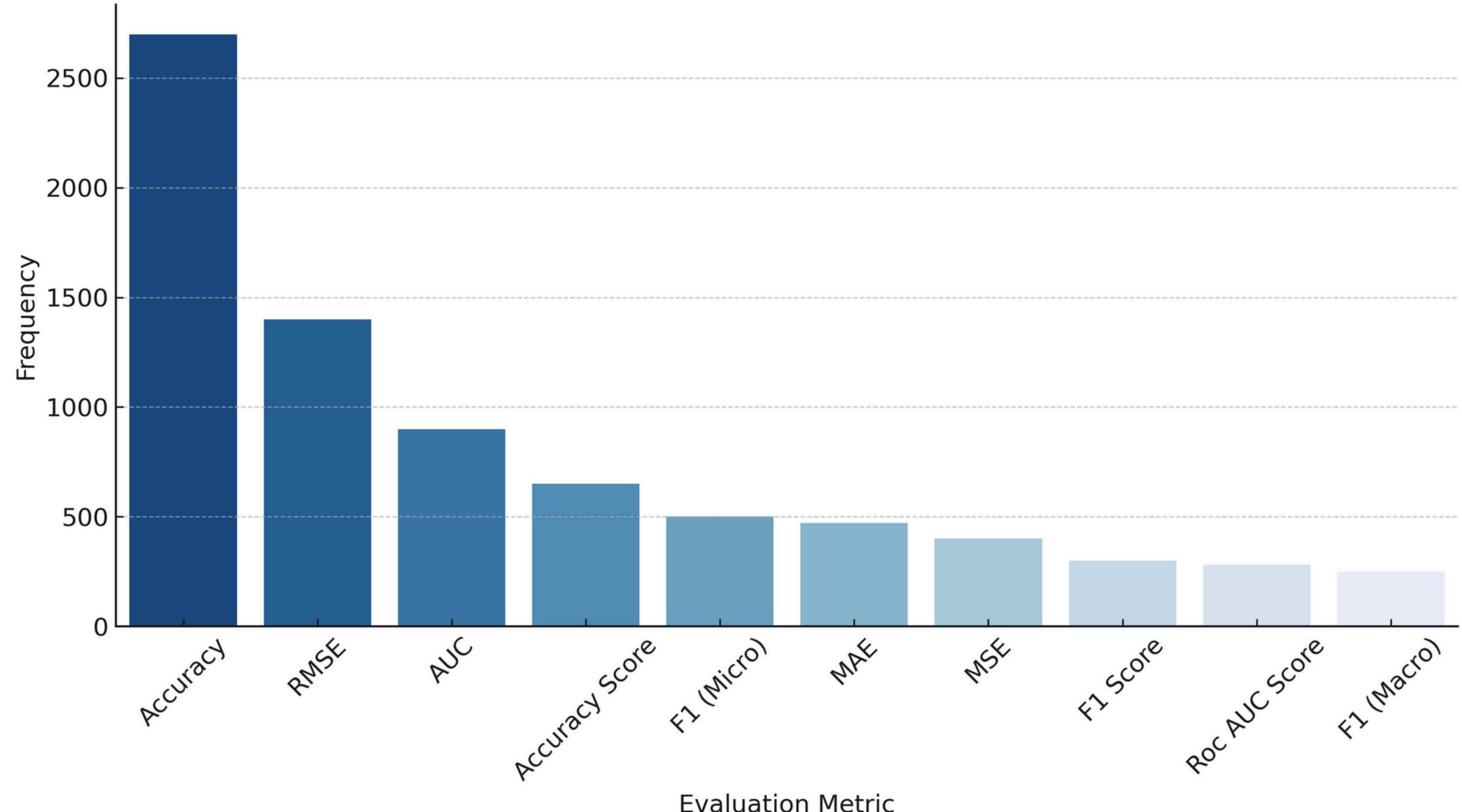


We explored competitions from 2010 to 2025,  
focusing on:

- Ranking the most used evaluation metrics;
- Tracking AI-related competition tags over time;
- Visualizing trends in AI domain popularity via metadata.

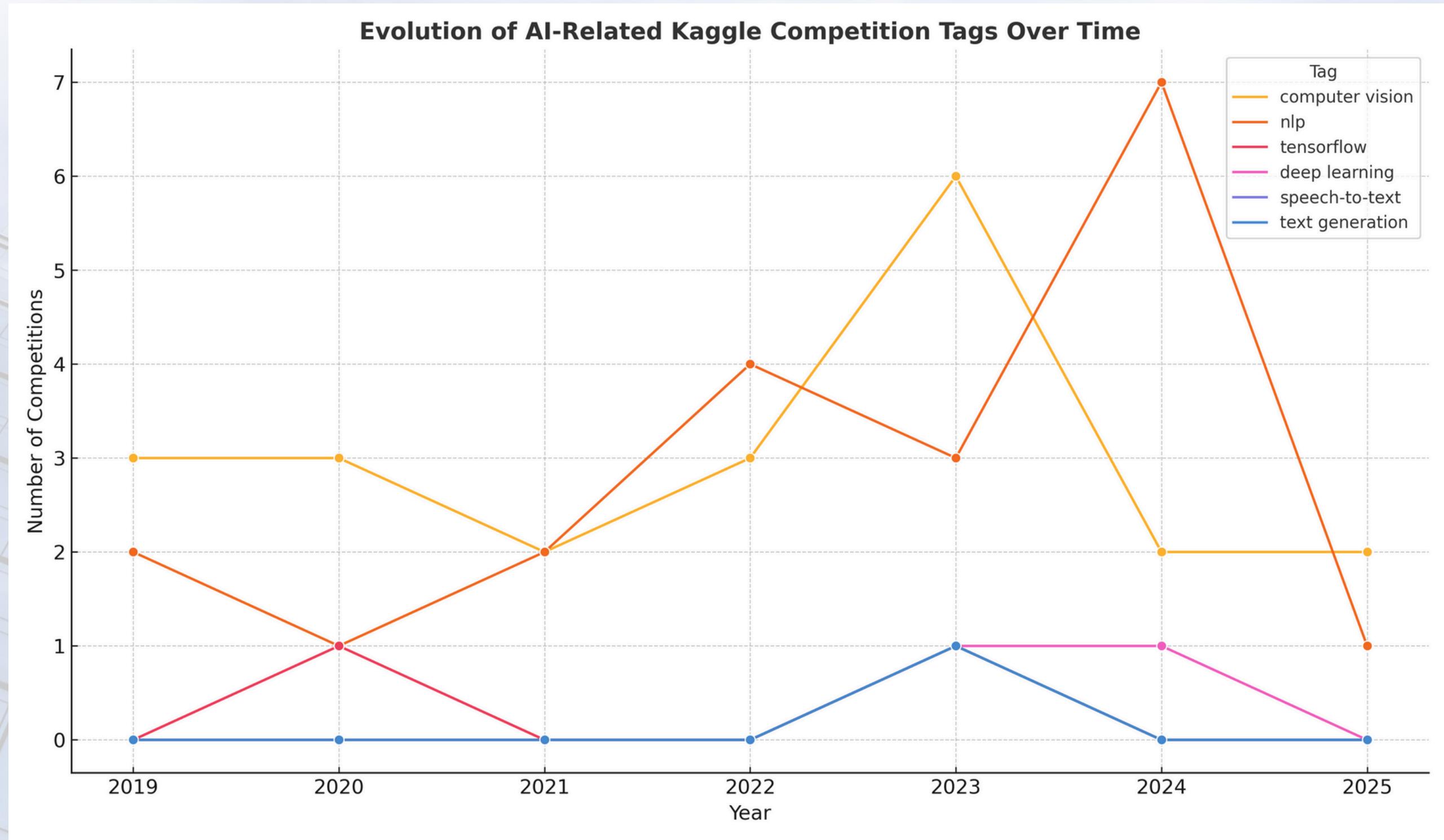


## Top 10 Evaluation Metrics in Kaggle Competitions



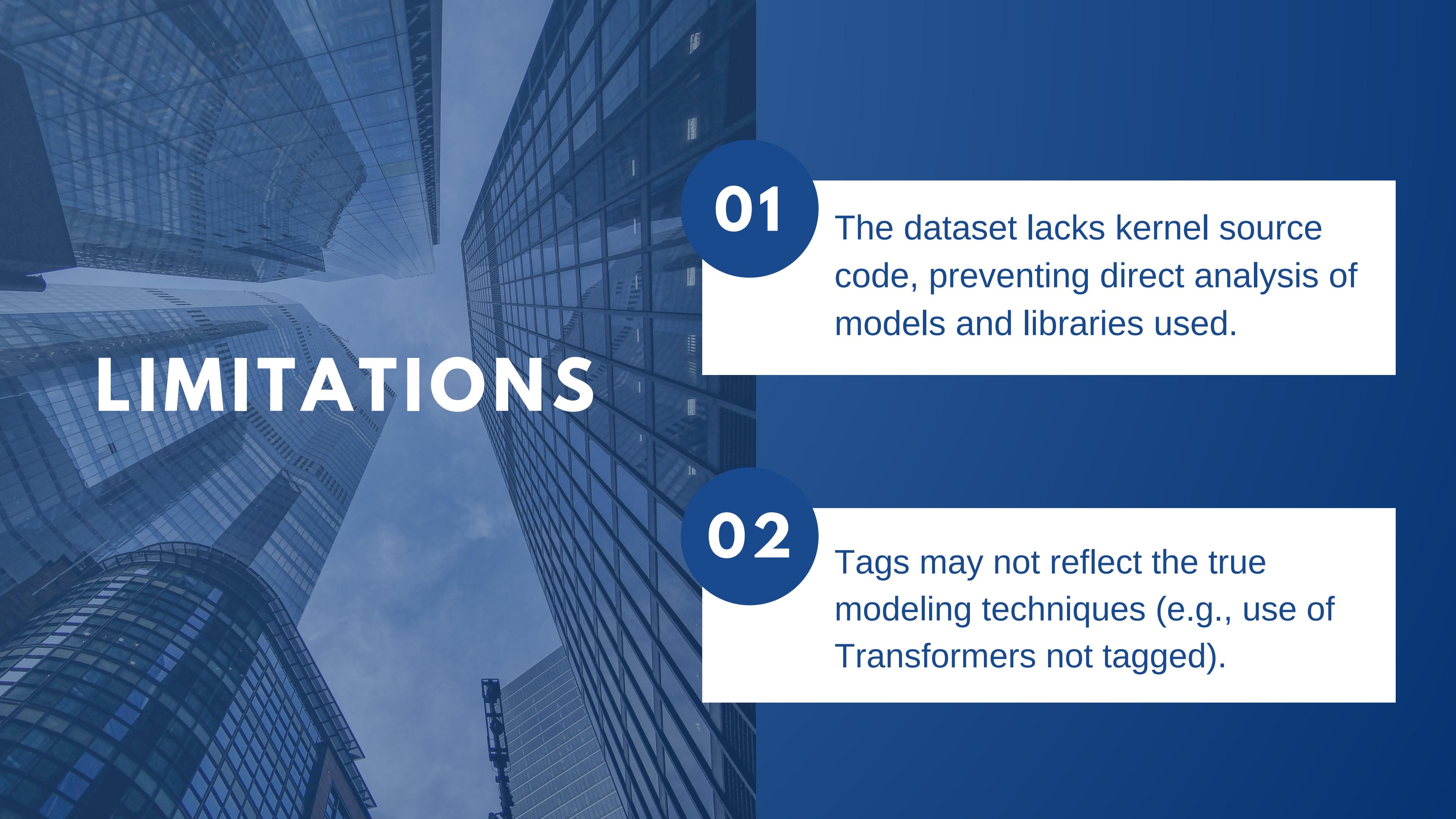
- Accuracy dominates (2500+ competitions), confirming the prevalence of classification tasks
- RMSE (Root Mean Squared Error) is second, highlighting the importance of regression
- Other metrics include AUC, F1 (Micro/Macro), MAE, and MSE

Observation: Metrics reflect the real-world application of models, with an emphasis on interpretable, performance-oriented measures.



- Steady growth in Computer Vision and NLP
- Rising appearance of Deep Learning, Text Generation, and Speech-to-Text starting 2023
- Tags like Transformers or Hugging Face are likely underrepresented due to metadata structure

Chart: A multi-line trend plot shows the number of competitions tagged per year by AI domain.



# LIMITATIONS

01

The dataset lacks kernel source code, preventing direct analysis of models and libraries used.

02

Tags may not reflect the true modeling techniques (e.g., use of Transformers not tagged).

# FINAL THOUGHTS

This analysis gives a high-level picture of AI's evolution on Kaggle. We've identified trends in evaluation and domain focus, showing how the community reflects broader shifts in AI.



# FUTURE DIRECTIONS

## CODE-LEVEL INSIGHTS

Analyze source code from notebooks (if available) to identify actual libraries used.

## MODELING EXCELLENCE

Study top-ranking solutions to trace successful modeling approaches.

## BEHAVIORAL TRENDS

Explore user behavior and cross-domain applications.



**THANK  
YOU**