

# Impact of Generative AI on Creative Industries

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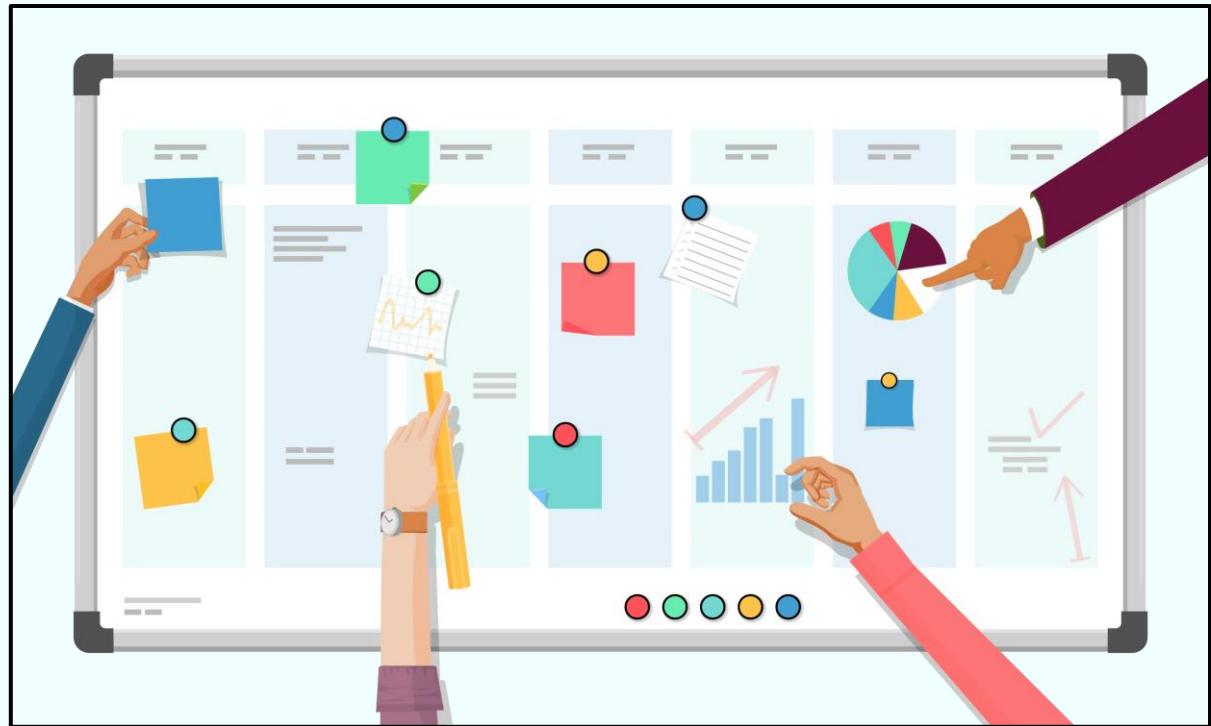
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Course: Computational Social Science 2025

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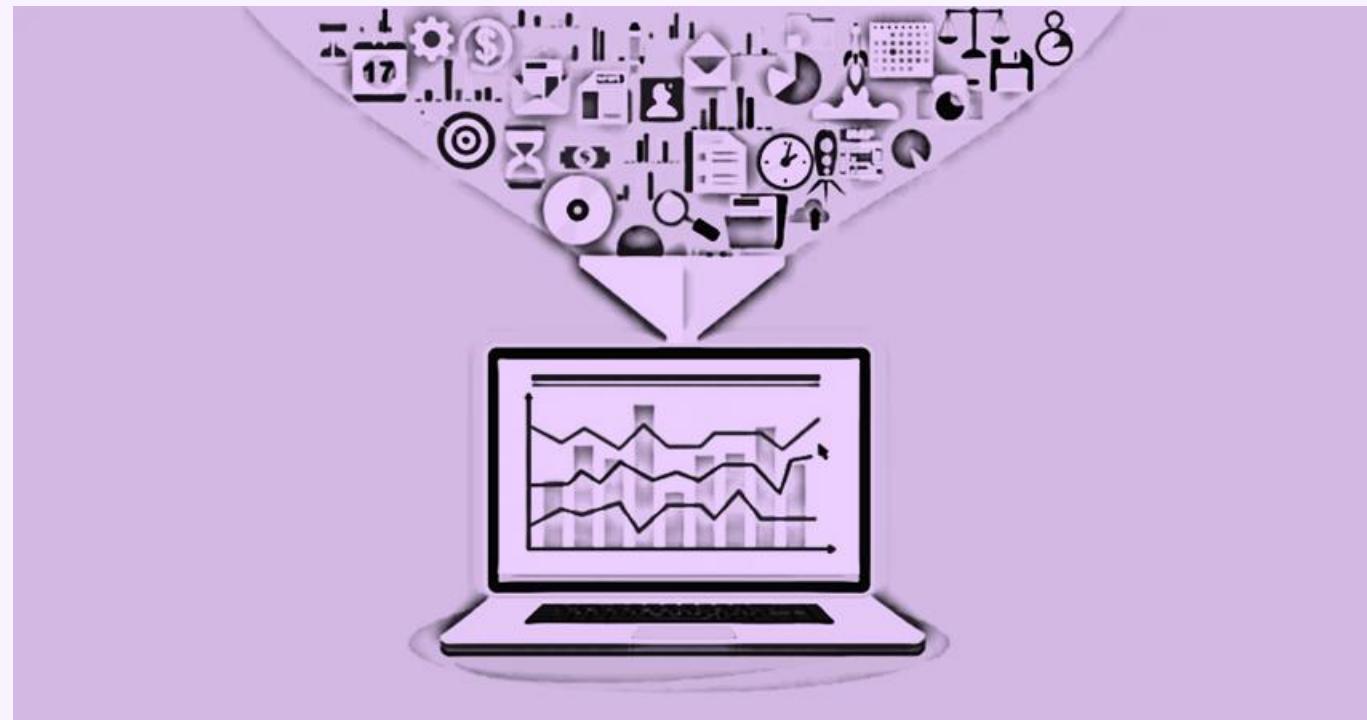
## Agenda

- Data Collection
  - EDA Workflow
  - Key Insights
  - Conclusions
  - Future Work



# Data Collection

- ❖ Source: Reddit Public Corpus (Academic Torrents)
- ❖ Volume: ~2.5 million interactions (comments + submissions)
- ❖ Target Communities: 10 professional subreddits: r/Art, r/DigitalArt, r/illustration, r/graphic\_design, r/writing, r/gamedev, r/copywriting

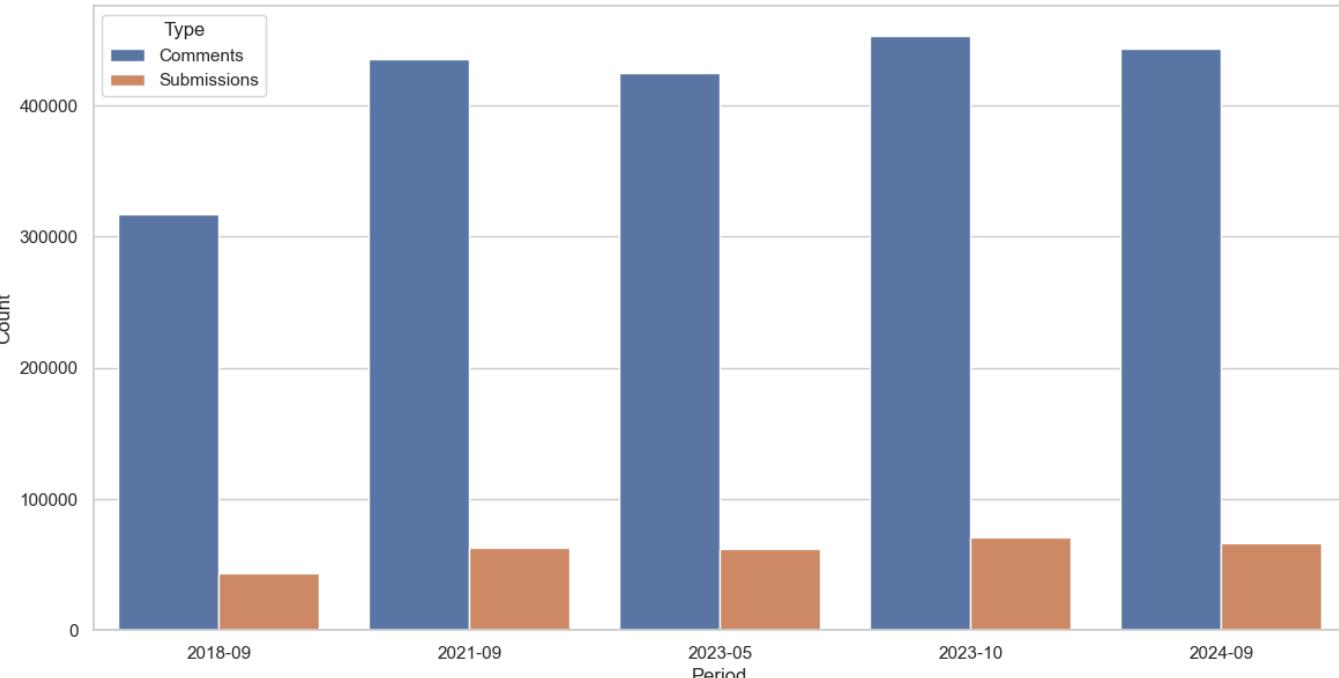


# Methodology & Timeline

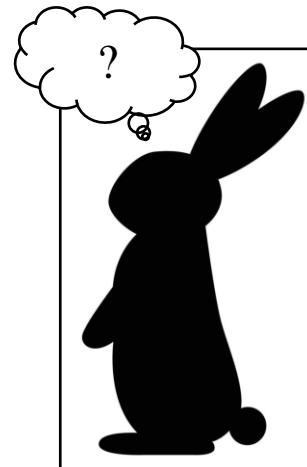
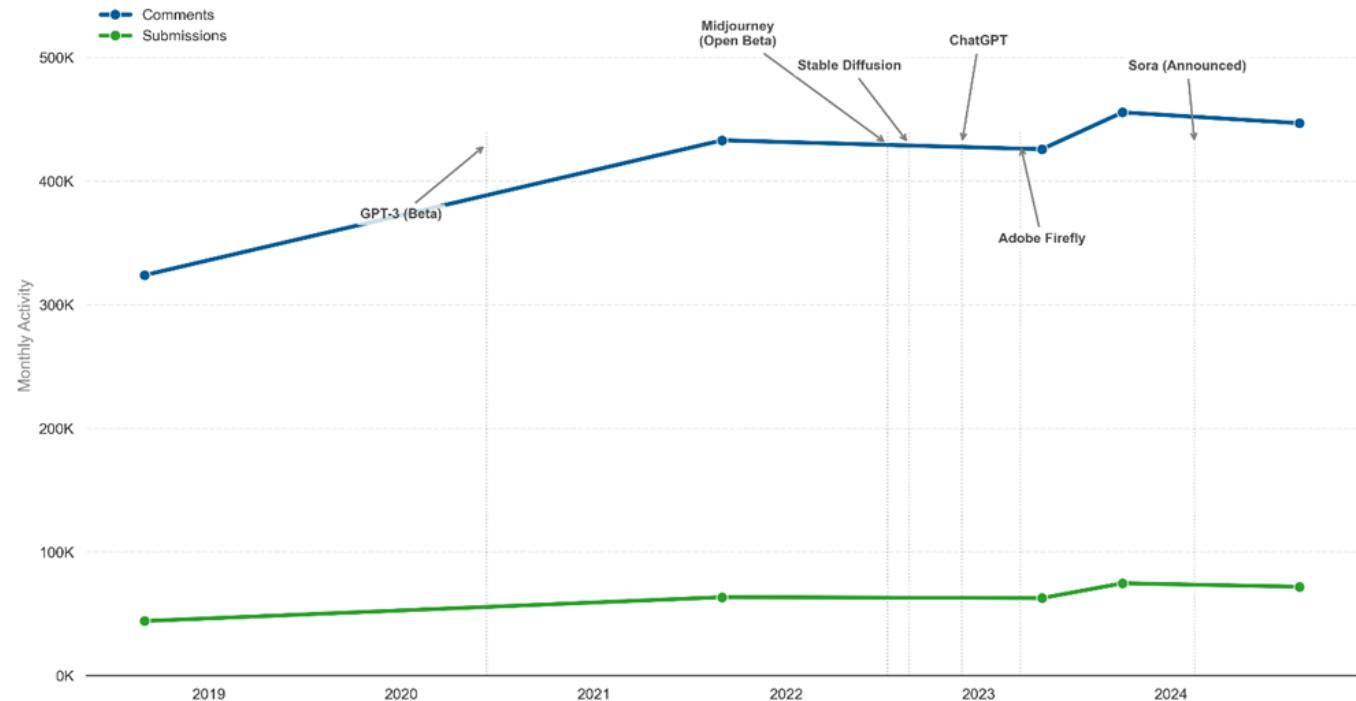
- ❖ Longitudinal Snapshots:
  - 2018, 2021 (Baseline)
  - 2023 May, Oct (Peak Hype)
  - 2024 Sep (Stabilization)
- ❖ Focus: Comparative analysis of activity, keywords, and sentiment

# EDA - Activity Analysis

- Trend: Activity remained stable during the "Text AI" era (GPT-3 release in 2020).
- The Spike: A massive surge occurred only in late 2023, driven by visual tools (Midjourney, Stable Diffusion).
- Conclusion: Visual AI posed a more immediate perceived threat than textual AI.

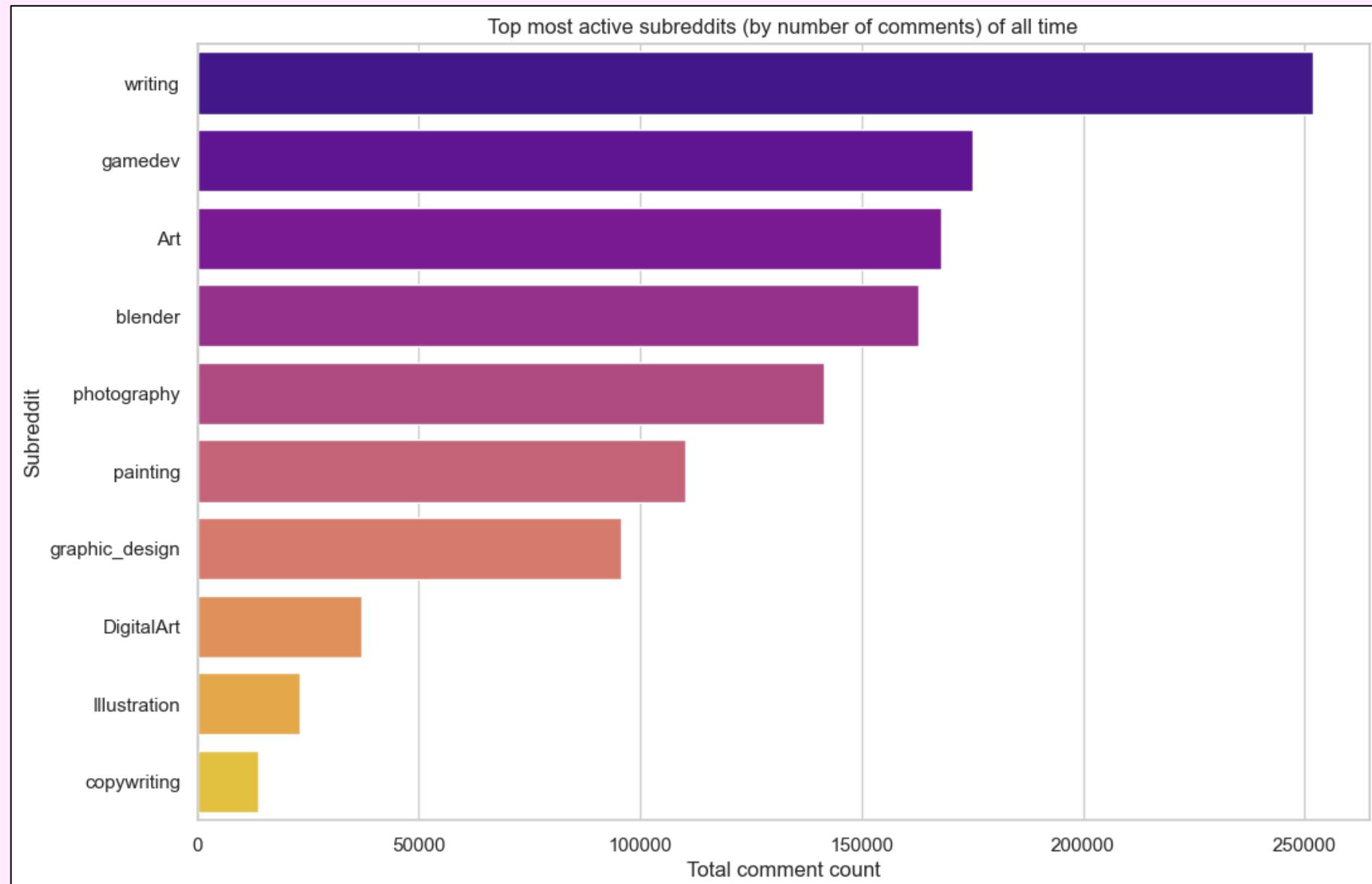


Impact of Key AI Releases on Reddit Activity (2018-2024)



# EDA - Community Distribution

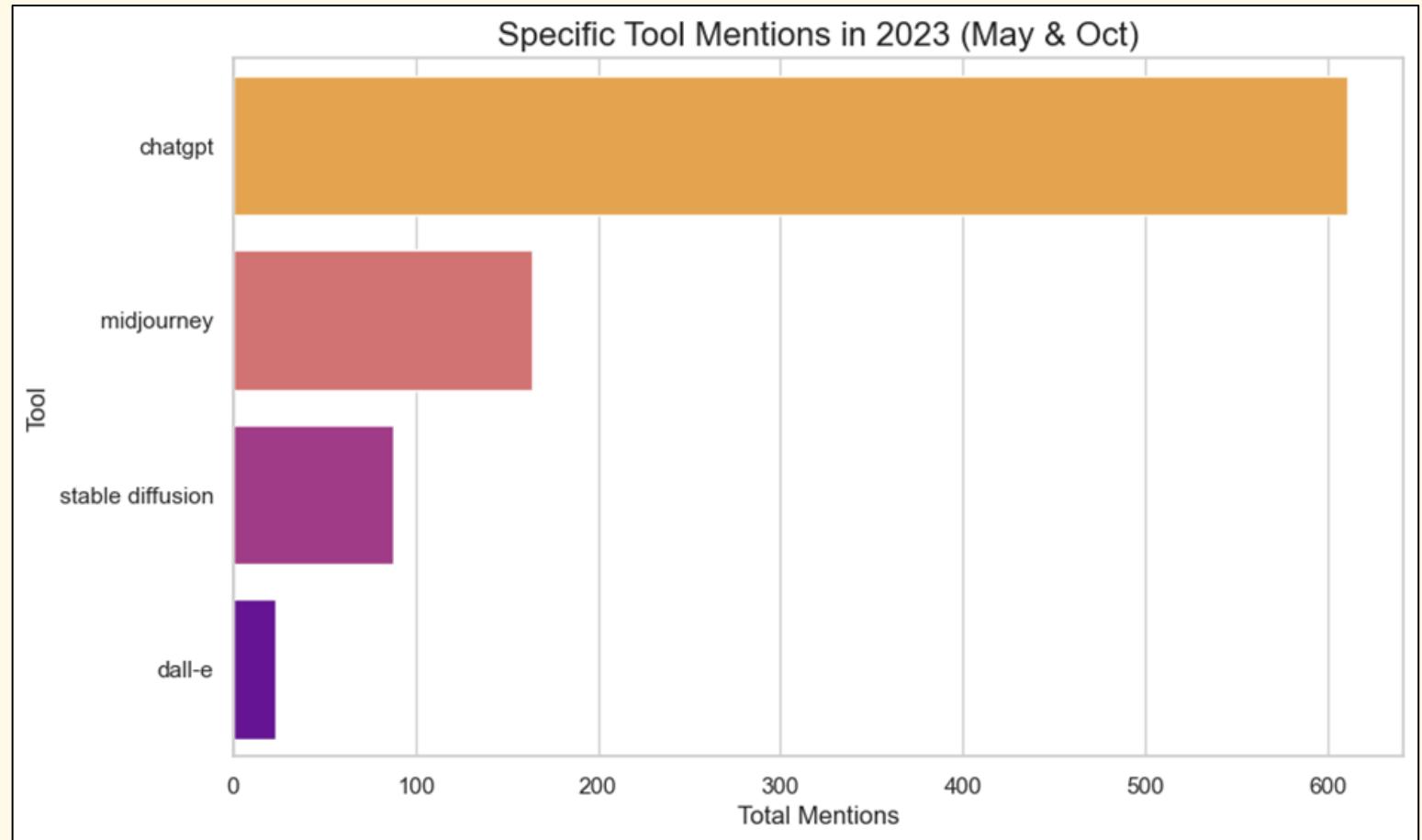
- Volume: r/writing and r/gamedev generate the highest volume of text.
- Reaction: While text-focused communities discussed more, visual art communities engaged in intense conflicts regarding subreddit rules and moderation policies.

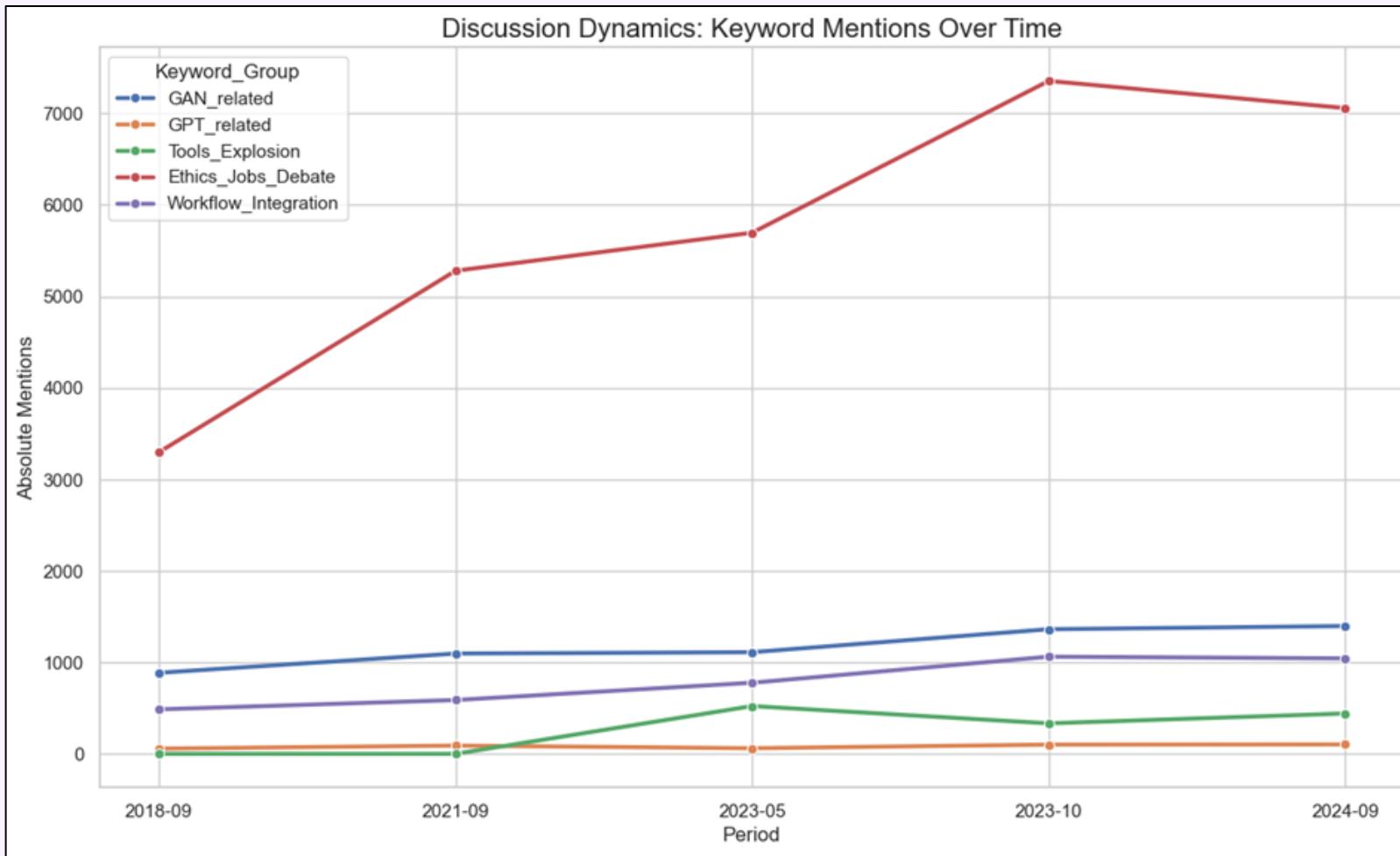


# EDA - Tool Mentions



- Dominance: In 2023, ChatGPT became the generalized term for AI, showing the highest absolute mention count.
- Catalysts: However, the initial disruption timeline correlates specifically with the release of Midjourney and Stable Diffusion.





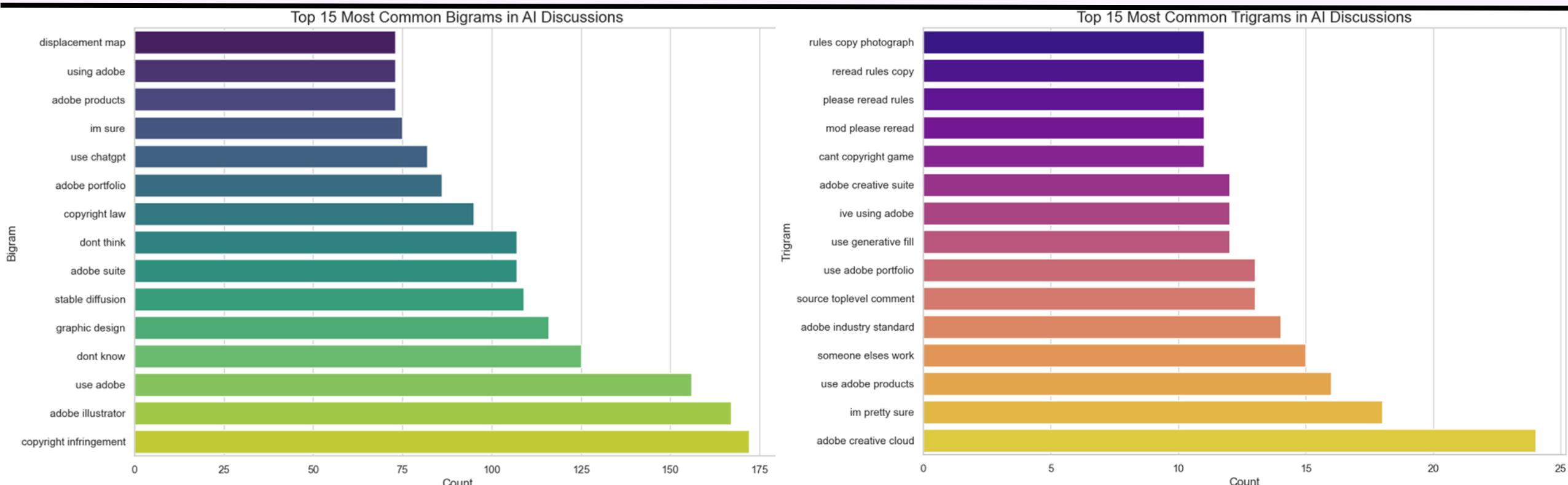
2023 (The Crisis): Dominated by the "Ethics & Jobs" debate (red line), focusing on displacement and theft.

2024 (The Shift): A clear pivot to "Workflow Integration" (purple line), focusing on tools and implementation.

## EDA - Topic Evolution

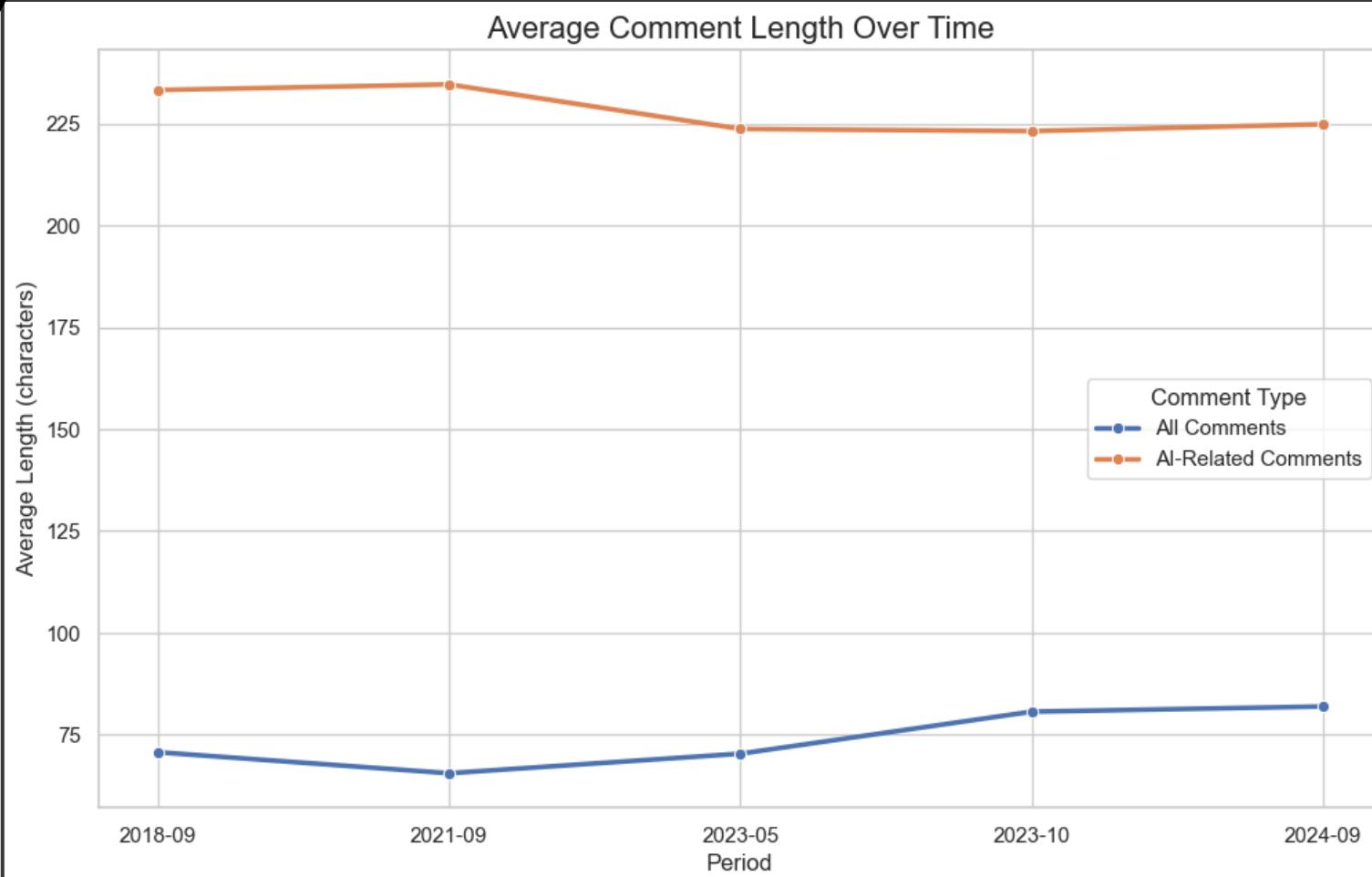
# EDA - Linguistic Patterns (N-Grams)

- Bigrams (The Legal Battle): Top phrases like "Copyright infringement" dominate. Insight: The primary barrier to adoption is legal anxiety, not technical capability. Users fear losing ownership of their work.
- Trigrams (The Mod War): Top phrases like "Rules copy photograph" and "Mod please reread" reveal an internal community conflict. Insight: A "Civil War" occurred in r/Art, where users fought against strict anti-AI moderation policies.



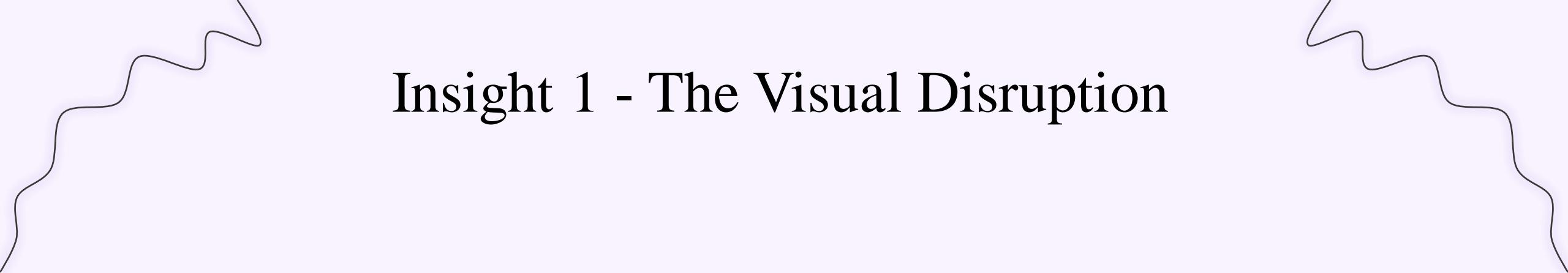
# EDA - Engagement Depth

- Metric: AI-related comments are 3x longer (~225 chars) than the historical community average (~75 chars).
- Meaning: Users are not just reacting; they are engaging in deep, complex argumentation ("cognitive load").



# Interim Summary

- Activity: Driven by visual tools.
- Engagement: High effort (long comments).
- Topics: Shifted from "Ethics" to "Workflow".



# Insight 1 - The Visual Disruption

- Fact: The release of GPT-3 (text) did not cause a statistically significant activity spike in these communities.
- Fact: The release of Midjourney (visual) caused a massive surge.
- Conclusion: Visual creatives felt more immediately threatened by "replacement" than text creatives.

# Insight 2 - From Panic to Integration

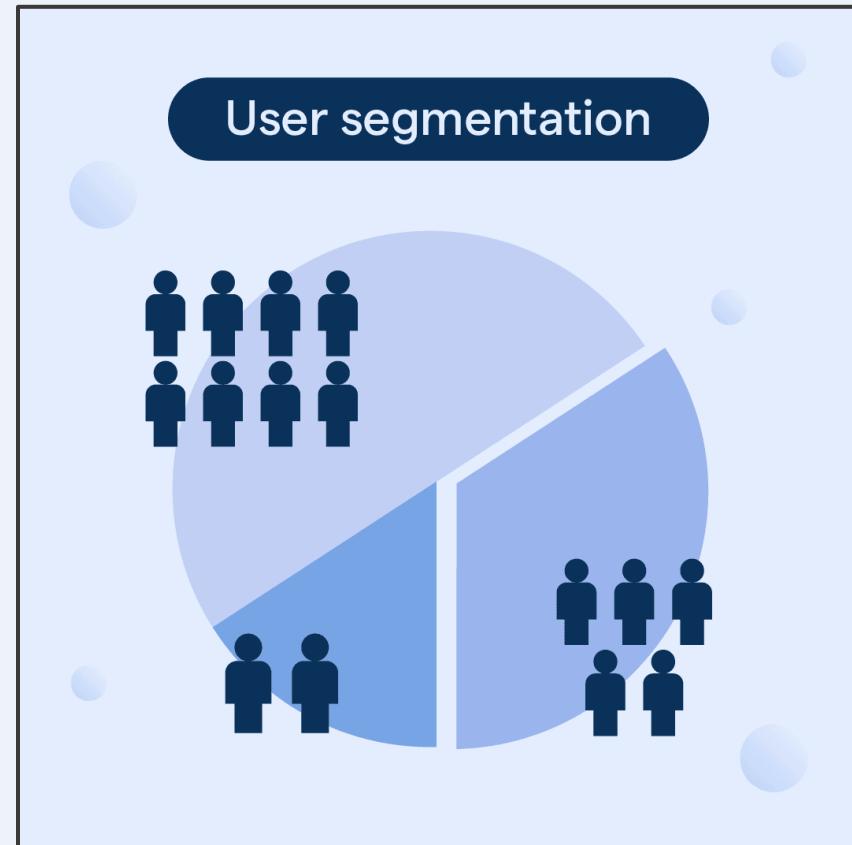
- 2023: Defined by "Ethical Panic".
- 2024: Defined by "Workflow Integration".
- Driver: The integration of AI into industry-standard tools (Adobe Photoshop) normalized the technology.



# Insight 3 - Community Segmentation

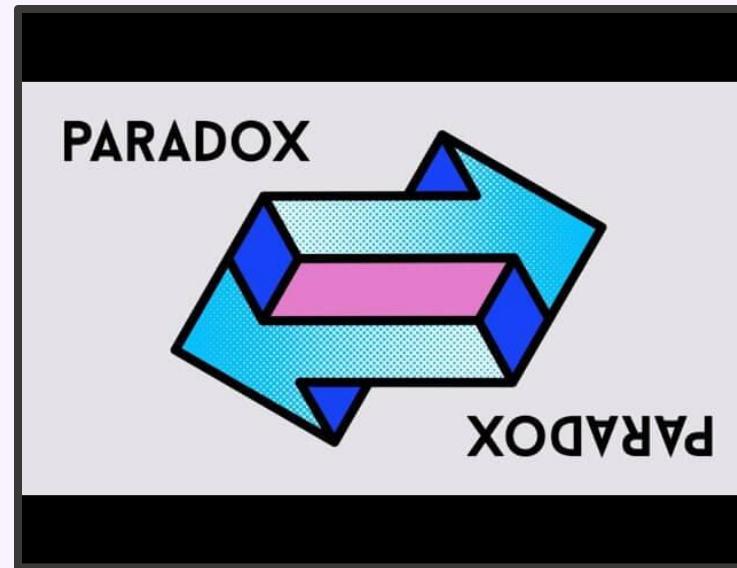
Bifurcation: The "Creative Industry" is not a monolith.

- Group A (Ethical Resisters): Traditional artists focused on human-centric definitions.
- Group B (Pragmatic Adopters): Tech-adjacent creatives (game devs) focused on pipeline efficiency.



# The Engagement Paradox

- Data: Posts with "Tools" in the title have a very low average score (~5 upvotes).
- Contrast: Posts about "Ethics" have much higher scores (~48 upvotes).
- Behavior: The community "downvotes" AI art showcases but actively upvotes/discusses the ethical debate.



# Future Work

- User Clustering: Segment users into Pro-AI vs Anti-AI cohorts.
- Demographic Analysis: Correlate sentiment with account age/seniority.



# Repository Link

[https://github.com/Sonafi3/Computational\\_Social\\_Science\\_2025](https://github.com/Sonafi3/Computational_Social_Science_2025)

