

Towards Real-Time Analysis of Digital Game Reception

Jari Lindroos

University of Jyväskylä
Jyväskylä, Finland

jari.m.m.lindroos@jyu.fi

Raine Koskimaa

University of Jyväskylä
Jyväskylä, Finland

raine.koskimaa@jyu.fi

Tanja Välisalo

University of Jyväskylä
Jyväskylä, Finland

tanja.valisalo@jyu.fi

Tero Kerttula

University of Jyväskylä
Jyväskylä, Finland

tero.t.kerttula@jyu.fi

1 Introduction

How players receive new digital games is of continuing interest to both game developers and scholars. Methods such as playtesting, surveys, and player feedback have been used in game development to optimize the opportunities to create a successful game. As current games are predominantly published as services to be developed continuously, rather than products with one publication date, the games can be altered and developed further even after their launch. Player feedback and game reviews are a useful information source for this type of game development (Lin et al., 2019). Game reviews are particularly important for a game’s commercial success, as they have been found to have an effect on player experience with a game and are often indicators of the game’s commercial success (Livingston et al., 2011). In addition, there is a considerable theoretical interest in deepening our understanding of the reception of cultural products both on individual and communal levels. Large Language Model (LLM)-enabled mass analysis of live streams opens up a significant potential for investigating the formation and dynamics of both the wide ranging horizons of expectations and encoding/decoding practices, and more focused interpretive communities (Jauss, 1982; Hall, 1973; Fish, 1980). In this work we introduce a framework for analysing the reception of a game on Twitch utilizing Multimodal Large Language Models (MLLMs) based on the audiovisual and chat contents.

2 Related Work

The publication and pace of game reviews has changed rapidly. Until the 2010s, written game reviews, which originated in the first computer and game magazines and later mostly transferred to online platforms, have perpetuated as the most vis-

ible and influential form of game reviews. Previous research into game reviews has typically focused on written reviews published in video game magazines and journalistic websites such as IGN and Eurogamer or player reviews from online marketplaces, such as Steam and mobile app stores (Zagal et al., 2009; Lin et al., 2019; Balakrishnan and Griffiths, 2019). Audiovisual game reviews first appeared on television shows focused on videogames in the 1990s (Kerttula, 2019) but due to fast internet connections becoming more available along with the emergence of online video hosting services, the actors in the field of video game journalism and game companies and publishers embraced these then new technologies readily in the first wave of YouTube and Twitch. The proliferation of online videos, short-form videos and online streaming in the 2010s are what has made the audiovisual format a dominant form of game reviews. Thus, video game streamers and YouTubers can be in a way seen as a modern form of online video game journalism (Kerttula, 2022).

While online video reviews first were user-generated content created by players rather than journalism professionals, they have since become increasingly professional (Jaakkola, 2018; Hallinan, 2023). Simultaneously, the impact of these content-creators in marketing has increased, and live streamers have been found to have an effect on their viewers’ willingness to purchase products recommended by the streamers they trust (Jiang et al., 2024). During a game launch its reception is very visible on livestreaming platforms where thousands of streamers play concurrently. These streams capture the live reactions of the streamers and their communities. Game reviews in livestreams differ from the more traditional reviews in either text or audiovisual format due to the affordances of the streaming plat-

forms. Instead of a one-way narrative, game reviews in platforms like Twitch are more akin to dialogues, with viewers having the opportunity to comment or ask questions via chat, and - perhaps due to this interaction - include much more detail than traditional reviews (Johnson and Woodcock, 2019). Because of this, they also provide a richer view on the reception than traditional evaluation focused reviews. While a game launch is an important event for the game developer, it is often significant for streamers as well, as they often cause a growth in viewer numbers (Johnson and Woodcock, 2019). However, current methodological tools do not sufficiently enable studying real-time reception. Livestream chats provide noisy data and manual analysis of livestream data is resource-heavy. While research into LLMs has explored their use in analyzing written game reviews (Sweetser, 2024), there is a gap for exploring their application within the livestreaming platforms.

3 Methodology

We will study the launch of *Saros* by Housemarque by investigating the capabilities of utilizing MLLMs as a framework to analyse the game reception happening in the livestream chats. To begin with, we will first collect data from the earlier trailer and possible playable demo releases, to form an understanding of the horizon of expectations regarding the selected games. Then we will collect data from Twitch.tv, from the first launch week of the game, extending up to the first 30 days. We select channels in the top percentile of peak concurrent viewers across multiple languages, prioritizing those focusing on a full-playthrough of the game, often split into multiple days of streams. We first classify chat contents into four categories: unique, non-unique, essentially non-unique but human-written, and commands & replies based on the framework in (Lindroos et al., 2025). We will prioritize unique messages for the main semantic content analysis, because they are most likely to contain chat-based evidence about the game while treating the other categories as secondary analysis. We then apply dense topic modeling (BERTopic) across the unique chat and speech transcripts to extract key reception topics and evaluate streamer-chat alignment. By leveraging these specific message classes and the audio transcript of the stream video, we can more effectively navigate the tech-

nical constraints of long-form video understanding (Ye et al., 2025). Rather than just processing the multi hour long raw video, we first utilize MLLMs as agents to pinpoint specific moments of interest from the chat contents and the audio transcript to distinguish between engaging intervals where the game is being actively discussed, but also the slower moments where conversation can shift to off-topic. We then further identify the causal links between the live chat and the video by correlating these moments across the modalities.

4 Conclusion

We introduce the first study to present a larger-scale analysis of a games launch phase reception, moving beyond prior work related on both written reviews and platformed video reviewing. By analysing the reception across different streams and language, our framework provides unique insights on how the livestream audience’s reception relates or differs from traditional game reviews.

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