

RESEARCH PROPOSAL:
THE IMPACT OF LARGE LANGUAGE MODELS
IN MEDIA AND ENTERTAINMENT
(TRANSCRIPT)

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[1]

INTRODUCTION

Hi, I'm Maria Ingold. Welcome to 'The Impact of Large Language Models in Media and Entertainment'. This is a research proposal for Research Methods and Professional Practice, part of my Master of Science in Artificial Intelligence at the University of Essex Online.

[2]

As an example, I created this presentation's cover image by prompting the ChatGPT 4o large language model and manually editing the image (OpenAI, 2024).

[3]

Following Dawson's (2015) proposal structure, I bring over 30 years' media and entertainment technology expertise. This includes over 200 speaking engagements at events like the International Broadcasting Convention (2022).

[4]

SIGNIFICANCE

Large Language Models (LLMs) are text-to-text models that comprehend and generate human language (Raiaan et al., 2024). These artificial intelligence (AI) systems use machine learning advancements, specifically deep learning, for natural

language processing (NLP) (Hadi et al., 2023). The core innovation is Vaswani et al.'s (2017) Transformer architecture which efficiently handles sequential data like sentences.

[5]

LLMs are built on Transformers with billions of parameters, as seen in this McCandless et al. (2024) sample. Pretraining uses self-supervised learning from unlabelled text corpora, while fine-tuning for specific tasks uses supervised labelled data (Raiaan et al., 2024). For multimodal capabilities, LLMs integrate with other models, like my title page's text-to-image image generation (Wu et al., 2023).

[6]

The term media and entertainment (M&E) is used inconsistently. Academic papers tend not to define it, while Mordor Intelligence (N.D.) categorise it into print, digital, and streaming media. However, they confuse streaming media's over-the-top (OTT) delivery with video-on-demand's (VOD) consumption (Ingold, 2020). Therefore, Price Waterhouse Cooper's (PWC) (2023b) broader definition is used, with business-to-business and non-fungible tokens (NFT) removed and social media made distinct.

[7]

PWC (2023b) reported global M&E revenues of USD 2.32 trillion in 2022. They projected slower growth due to declining customer spend but identified generative AI's potential. McKinsey's Chui et al. (2023) estimate that generative AI, including

LLMs like ChatGPT, could boost global M&E productivity by up to USD 110 billion annually. However, public industry reports lack detail on achieving these results, and there are no comprehensive academic papers.

[8]

While not media-focused, Zhao et al.'s (2023) survey describes seven cross-sector research directions for LLMs. Classic tasks include text generation, search and recommendation. Enhanced capabilities include multimodal LLMs and knowledge graphs, which reduce hallucinations (Martino et al., 2023). New scenarios include LLM-based agents with short and long-term memory, planning and execution, as well as LLMs capable of evaluating quality at scale.

[9]

RESEARCH QUESTION, AIMS AND OBJECTIVES

Given the limited industry understanding and lack of peer-reviewed papers on LLMs in M&E, the research question is: 'What are the impacts of LLMs across media and entertainment?' The study qualitatively explores these effects through secondary research (Dawson, 2015). Objectives include reviewing existing literature on LLMs, identifying current and potential uses in media and entertainment, and discovering trends, challenges, and opportunities.

[10]

LITERATURE REVIEW

Fan et al. (2024) reviewed over 5000 LLM papers, while Raiaan et al. (2024) cite only five LLM overviews, including themselves, and observe most are not peer reviewed. At Raiaan et al.'s publication (2024), only Huang and Chen-Chuan Chang (2022) were published. Since then, Fan et al. (2024) and Chang et al. (2024) have been published, but many LLM papers on Google Scholar (N.D.) are preprints. Although still unpublished, Zhao et al. (2023) is an ongoing work with 124 pages, 13 revisions, and 1,763 citations.

Raiaan et al. (2024) claim only their paper focuses on domain-specific LLMs but Table 1 shows that except for Huang and Chen-Chuan Chang (2022), domain-specific applications are covered, but limited for media and entertainment. Fan et al. (2024) found social and humanitarian applications, primarily social media and news, are the second most common theme. Raiaan et al. (2024) includes content generation and text classification for social media. By contrast, Zhao et al. (2023) analyse domain-specific applications, but do not mention media and entertainment, describing social media only as a training source.

[11]

Shifting focus from broad LLM reviews, Google Scholar (N.D.) narrows to “large language model” OR “large language models” AND “media and entertainment” since 2020. Following a Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guide for inclusion, this starts with 155 papers with two duplicates (Page et al., 2021). Of the 153 remaining, none include both large

language model(s) and media and entertainment in the title or abstract, and internally, many like Tokayev (2023), include only a single sentence.

Conversely, Hadi et al. (2023), in pre-print, have a media and entertainment subsection on media-specific LLMs, use cases and tools, but the tools only mention AI and machine learning. Bengesi et al.'s (2024) subsection lists 77 tools with their respective multimodal tasks but focuses broadly on generative AI. Both link to product websites, not industry use cases. Neither address ethical and copyright risks exemplified by ongoing strikes (Parvini, 2024). None of these define media and entertainment, therefore lack the categorisation of PWC (2023b).

[12]

Replacing “media and entertainment” with “media” returns over 17,000 results since 2020, while “entertainment” returns nearly 6,000 (Google Scholar, N.D.). Many are preprints, indicating nascent research, and titles indicate a narrower focus. Examples range from Peters and Matz’s (2024) paper on LLM use in psychological profiling in social media to Gallotta et al.’s (2024) survey on LLMs in games.

Public industry reports focus broadly on generative AI, not LLMs, either in M&E like PWC (2023a), or cross-sector like Chui et al. (2023). Academic papers focus either on cross-sector LLMs like Raiaan et al. (2024), or single sectors, narrowly like Peters and Matz (2024) or broadly like Gallotta et al. (2024). Mid-level subsections like Hadi et al. (2023) and Bengesi et al. (2024) occasionally conflate LLMs with AI and lack

M&E expertise. A dedicated paper on LLMs in media and entertainment is needed to establish a foundation for future research and studies.

[13]

DESIGN AND METHODOLOGY

This research-based project focuses on insight rather than database development (Dawson, 2015). It is industry-focused, but not sponsored by one organisation. With no specific problem to solve, this study is exploratory rather than explanatory, descriptive or evaluative (BRM, N.D.; QuestionPro, N.D.; Dawson, 2015; Saunders et al., 2019). Exploratory's adaptability enables narrowing or broadening, however, predicting outcomes is challenging (Saunders et al., 2019).

Exploratory draws a general conclusion rather than testing a hypothesis (Dawson, 2015). This interpretivist approach uses inductive reasoning on qualitative data to identify patterns and themes (Saunders et al., 2019). Qualitative uses secondary archival research data, not quantitative primary experimental or survey data.

Timewise, this is a cross-sectional 'snapshot', rather than a long-term analysis (Saunders et al., 2019).

This synthesis follows a sequential, iterative approach to gather, analyse, interpret, and present (Dawson, 2015; Saunders et al., 2019). Each iteration evolves the research. For instance, adjusting subcategories to reflect both academic and industry perspectives.

[14]

While Saunders et al. (2019) apply unstructured and semi-structured to qualitative interviews, and highly structured to quantitative, Dawson (2015) affirms that a literature search is systematic and structured. This search uses private and public industry research as well as academic papers.

Dawson's (2015) structure accommodates LLM's nascency. Core research is from 2020 onwards, except for foundational works. Peer-reviewed and published are prioritised, but relevant industry products, reports, and highly cited papers are considered. Searches use Google Scholar (N.D.) for large language models, media, entertainment, and subsectors. Required resources, including a Microsoft Windows PC, Word, PowerPoint, Excel, and broadband, are already procured.

[15]

ETHICS AND RISK ASSESSMENT

Dawson's (2015) ethical considerations include research performance, participant interaction, and results presentation; however, this proposal does not involve participants. Secondary research is attributed, and private reports are only referenced with prior approval. Public data respects usage terms and copyright per the British Computing Society's (BCS) (N.D.) Code of Conduct. Results are honestly and objectively reported, aligning to BCS's (N.D.) standards for professional competence and integrity.

The interpretivist approach is subjective, so researcher bias is a risk (Saunders et al., 2019). Researcher error is also a risk, especially with new technologies like LLMs. Triangulating multiple data sources is crucial for validity (Dawson, 2015; Saunders et al., 2019). To mitigate hardware or software failure, Microsoft OneDrive synchronises with password-secured online storage, and evolving the research scope addresses data volume issues (Dawson, 2015).

[16]

TIMELINE

This Gantt chart follows Dawson's (2015) recommendation and the University of Essex Online (N.D.b) six-month dissertation timeline. Following the research proposal submission, there are twenty weeks to complete the research paper, and two for the presentation. Five weeks are for the literature review, eight for research and analysis, four for writing, and two for editing. While the process is iterative and sometimes concurrent, target dates focus stage completions to keep the project on track (Dawson, 2015; Saunders et al., 2019).

[17]

ARTEFACTS AND CONCLUSION

This study will examine LLMs' impact on media and entertainment using an exploratory interpretivist approach. Following Dawson (2015) and the University of Essex Online (N.D.a) structure, artefacts include a report and presentation. The

introduction explains the importance of understanding LLMs' impact on media entertainment for industry and academia. The literature review, focusing on secondary data from 2020 onwards, addresses the gap between industry and academic papers, and establishes subsectors, themes, opportunities and challenges (PWC, 2023b). The iterative sequential methodology explains the decision-making process and result replication. Findings demonstrate LLM use in academia and industry, identifying technical and ethical issues and emerging patterns. Discussion analyses the themes, issues, and opportunities, and the conclusion provides a foundation for understanding the transformative potential and the ethical considerations of LLMs in media and entertainment.

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