

Original Research Article

Research on AI-driven social media recommendation strategies for traditional cultural content

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Abstract: The algorithmic distribution of social media has changed the traditional pathways of cultural dissemination, with both trending and fragmented content coexisting, which can easily lead to symbolic consumption and shifts in value. This article takes a humanities-oriented approach, exploring methods such as semantic modeling, dynamic profiling, weight adjustment, collaborative production, and multimodal experiences to enhance the interpretability and transmission effectiveness of recommendations. It aims to provide strategic reference for platform governance and high-quality content supply, while promoting sustained cultural understanding among audiences during their routine browsing.

Keywords: artificial intelligence; social media; traditional culture; content recommendation; multimodal integration

1. Introduction

Short videos and information feeds have become the main channels through which the public engages with traditional culture. Recommendation systems act as 'gatekeepers' in traffic distribution, capable of amplifying high-quality knowledge but also potentially reinforcing homogeneous content and a tendency for sensationalism. At the same time, content related to intangible cultural heritage, museums, and traditional Chinese styles is rapidly increasing, with text, images, audio, and interactive data emerging simultaneously. This urgently calls for more refined semantic characterization and value constraint mechanisms to balance communication efficiency with cultural depth.

2. The practical significance of AI-driven recommendations of traditional culture content on social media

In the context of social media, traditional cultural content is often condensed into short phrases, symbols, and emotional highlights, spreading quickly but difficult to deeply understand. If AI-driven recommendation mechanisms can model the semantic richness of classical texts, intangible cultural heritage skills, and local customs in detail, and match them with the gradual evolution of user interests, accidental encounters can become sustained engagement, allowing cultural knowledge to enter daily learning routines. For creators, algorithms that recognize high-quality narratives and professional explanations can improve the traffic structure that currently favors low-quality content, enhancing the stability and innovation of content supply. For platform governance, prioritizing humanistic values and collaborative review can curb sensationalism, distortion, and pseudo-traditional content, establishing interpretable value boundaries and promoting broader and higher-quality public cultural services online. More importantly, recommendation results can feedback through interaction data into content production and resource allocation, helping museums, schools, and media reach accessible audiences and strengthen cultural identity among the youth.

3. Strategy paths for AI-driven recommendation of traditional culture content on social media

3.1. Content semantic modeling strategy based on cultural connotation layering

Semantic modeling based on the stratification of cultural connotations should first address the issues of

'multiple meanings of the same symbol' and 'inconsistent expressions across different media.' The content can be divided into three types of semantics: the factual layer, the imagery layer, and the value layer. The factual layer annotates verifiable information such as dynasties, historical figures, types of artifacts, craftsmanship processes, and geographical lineages. The imagery layer extracts aesthetic elements and narrative motifs, such as pattern structures, color syntax, rhythm and melody, ceremonial scenes, and emotional direction. The value layer focuses on frameworks of meaning such as concepts of ritual and morality, narratives of family and nation, and ethical norms. During modeling, a knowledge graph or ontology can serve as the backbone, linking classical entries, intangible cultural heritage projects, museum collections, and modern life contexts. Topic models and semantic vectors can then disambiguate short texts, titles, and tags to avoid misalignment caused solely by clustering of popular keywords. For videos and images, object recognition and style feature extraction can be introduced to map 'artifact category—Craft technique—Decorative meaning' into a unified semantic space. For audio, features such as mode, tempo, and timbre can be extracted to supplement missing textual information. Ultimately, a semantic representation in the form of 'layered tags, sources of evidence, and confidence level' is created, providing an interpretable basis for recommendation ranking and leaving interfaces for error correction and traceability.

3.2. Dynamic profile update strategy for user cultural interest evolution

Dynamic profile updates oriented toward users' evolving cultural interests require distinguishing the true motivation behind a single click, avoiding mistaking a 'came across it casually' action for a long-term preference. Profiles can be set with two tracks: stable preferences and situational preferences. Stable preferences come from continuous viewing, bookmarking, revisiting, and comment expression, reflecting long-term inclinations toward calligraphy and painting, traditional Chinese music, intangible cultural heritage crafts, historical interpretation, etc. Situational preferences are related to life scenarios such as festivals, travel, parent-child activities, or exam preparation reading and can be weakly modeled through time windows combined with geography and schedule rhythms. When updating, a decay mechanism and staged topic migration detection should be introduced. For example, a user may focus on traditional customs and rituals before the Spring Festival, then shift to artifact appreciation or museum guides afterward. The system should capture these changes on a shorter cycle while preserving core interests from being overshadowed by short-term trends. Interaction signals should also be weighted hierarchically: search, long dwell time, revisiting, and bookmarking carry higher weight, while single likes and swipes serve only as weak evidence. For the same content, 'watched completely but no interaction' can use completion rate and return visits to assess true attraction. To stay close to daily life, adjustable interest panels and explanations should be provided, allowing users to quickly calibrate their profile under needs such as 'recently want to learn tea ceremony' or 'preparing to do paper-cutting with children' and reducing recommendation bias caused by fixed labels.

3.3. Strengthening human-centered algorithm weight adjustment and value guidance strategies

Strengthening the weighting of a human-centered approach should incorporate both 'visually appealing' and 'substantive' content into the ranking logic, introducing indicators such as credibility, knowledge density, and appropriateness of expression in addition to click-through rates. Basic weight can be increased for content from authoritative sources, with traceable citations, or explanations supported by evidence chains. Conversely, content that is clickbait, sensationally pieced together, deliberately strange, or distorts historical facts should be downgraded and subject to review thresholds, with prompts for controversial points and correction entry points prioritized. Value guidance does not mean preaching; rather, it helps users naturally follow a path of understanding through optimized content structure. For example, short content that includes background explanations, terminology clarification, procedural steps, and application scenarios should be recommended first, followed by extended reading or related museum announcements after viewing. For adolescents and parent-child scenarios, the proportion of educational, hands-on, and etiquette-related content can be moderately increased, while controlling consumption misguidance caused by excessive commercialization, making recommendations more aligned with everyday learning and life experiences.

3.4. Strategies for building mechanisms to optimize collaboration between content production and recommendation

The key to the collaborative optimization of content production and recommendation lies in connecting the expressive structure on the creation side with the semantic needs on the recommendation side, forming a sustainable supply loop. The platform can provide creation templates and metadata prompts aimed at traditional culture, encouraging creators to complete information such as dynasty, region, artifact category, technique process, reference sources, and applicable context, making it easier for algorithms to identify 'what is being told, based on what, and suitable for whom.' On the recommendation side, user feedback can be broken down into actionable signals—For example, fully viewed videos that skip extended explanations suggest 'pacing is too slow,' high save rates but few comments suggest 'useful but lacks interaction'—Which can then be used to generate creative suggestions and topic popularity maps. For professional entities such as museums, intangible cultural heritage inheritors, and teachers, certified cooperation pools can be established, offering stable exposure and special topic planning opportunities, reducing the pressure from entertainment content. At the same time, setting up error correction, collaboratively built vocabulary, and content review channels allows high-quality content to be continuously refined and preserved as long-term, searchable, and reusable cultural resources.

3.5. Optimization strategies for traditional culture recommendation experience driven by multimodal fusion

Experience optimization under multimodal integration should organize text explanations, image details, sound atmosphere, and interaction paths into a perceptible learning chain to lower the barrier to user understanding. Recommendations can extract patterns, shapes, and material features from image recognition, align them semantically with keywords from subtitles and comments, and use audio features to identify opera singing styles, folk music timbres, or the rhythm and atmosphere of ritual scenes, achieving "understandable to see, identifiable to hear, and easy to find." At the presentation level, multi-angle cards with one-click switching can be offered, such as zoomed-in views of artifacts, step-by-step craft videos, listening to themed tunes, and location guides, meeting both casual commuting browsing and in-depth weekend learning needs. Adaptation to life scenarios is also important: parents can receive handcraft material lists and safety tips, travelers can get nearby museum and route recommendations, and learners can obtain terminology explanations and quiz questions. The value of multimodality lies in extending interest from brief engagement to actionable involvement.

4. Conclusion

The effective dissemination of traditional culture on social media depends not only on the professionalism of content supply but also on the value orientation and explainability of recommendation mechanisms. Through hierarchical semantic modeling, dynamic profile updating, humanistic weight adjustment, collaboration between production and recommendation, and optimization of multimodal experiences, a more robust balance can be established between traffic efficiency and cultural depth, making high-quality content easier to discover, understand, and form continuous learning. In the future, under the premise of cross-platform data interoperability, bias assessment, and privacy protection, a verifiable and iterative recommendation governance framework can be further improved.

References

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