Abstract

The rapid growth of Over-The-Top (OTT) streaming platforms has transformed media consumption globally; however, the increasing prevalence of explicit adult content has unintentionally marginalized family audiences, particularly in culturally diverse societies such as India where co-viewing across age groups is common. This study aims to address this challenge by proposing a Responsible AI-driven adaptive content moderation framework that enables inclusive, age-appropriate media access while preserving creative integrity and viewer autonomy.

The primary objective of this research is to design an ethical AI system that dynamically adapts sensitive audiovisual content—such as nudity, sexual scenes, and abusive language—based on user-defined preferences rather than platform-imposed censorship. The proposed methodology adopts a layered AI architecture comprising perception, contextual intelligence, and adaptive action. Computer vision models are employed for visual sensitivity detection, while Natural Language Processing (NLP) models identify explicit dialogue. Large Language Models (LLMs) function as contextual reasoning agents to assess narrative importance and generate concise plot-preserving summaries when content is modified or skipped.

Analytical evaluation is conducted through a conceptual case-study approach, assessing the framework's effectiveness across ethical dimensions including fairness, inclusivity, cultural sensitivity, and child safety. The analysis highlights how adaptive moderation minimizes narrative disruption, enhances user trust, and reduces content avoidance without diluting artistic vision. The framework also addresses algorithmic bias and transparency by incorporating user control and explainable AI mechanisms.

The implications of this research extend to the social sustainability pillar of Responsible AI, aligning with ethical governance and equitable digital access. By promoting family-inclusive viewing, protecting minors, and supporting culturally responsible media consumption, the proposed framework offers a scalable roadmap for ethically sustainable OTT ecosystems. This study contributes to ongoing discourse on responsible AI deployment in media platforms and emphasizes the role of adaptive intelligence in balancing innovation with societal values.