

Responsible AI-Driven Adaptive Content Moderation for OTT Platforms

Enabling Inclusive and Family-Safe Streaming in India

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Track: Ethics, Equity, and Responsible AI in Sustainability

RESEARCH PAPER OVERVIEW





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The Challenge: OTT's Family Viewing Crisis

600M

OTT Users

India's projected OTT audience by 2029, making it
third-largest market

8h 29m

Daily Usage

Average time Indian teens spend on OTT—highest
globally vs 6h world average

68%

Addiction Rate

OTT addiction among Indian youth, linked to mental
health concerns

54%

R-Rated Content

Average share of adult content on Netflix Top 10
across five countries

Explicit content makes family co-viewing uncomfortable—parents scramble for remotes

What's Streaming: Content Reality Check

Sexual Content

Explicit scenes, nudity, suggestive material

Violence & Gore

Graphic depictions, blood, weapons

Profanity

Abusive language, slurs, offensive dialogue

Substance Use

Drug and alcohol depiction

"Watching with family members is becoming harder these days"





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Current Solutions Fall Short

What Platforms Offer Today

- Basic age ratings
- Kids vs general profiles
- Parent PINs
- Broad category blocks

What's Missing

- Selective filtering by category
- Per-household customization
- Dynamic scene adaptation
- Narrative preservation

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AI Technology: Ready to Transform



Computer Vision

80-90% accuracy detecting nudity, violence, weapons using CNNs and transformers



Audio & NLP

ASR transcribes dialogue; models classify profanity, slurs, toxic content



LLMs

Generate context-preserving summaries for skipped scenes



The Proposed Framework: Four-Stage Pipeline



Detection Layer

Computer vision, audio analysis, and NLP identify sensitive content within media streams.



Classification & Policy

Identified content is mapped to categories and compared against user-defined preferences and policies.



Adaptation Layer

Content is dynamically blurred, muted, bleeped, or skipped based on the applied settings.



Context Preservation

Large Language Models (LLMs) generate concise summaries for skipped scenes to maintain narrative flow.

User Control: Personalization in Action



Family Mode

Blur nudity, mute profanity, skip explicit scenes with summaries



Teen Profile

Allow mild violence, block explicit sex and heavy drug use



Custom Adult

Choose what to blur, mute, or skip based on your personal preferences

Responsible AI: Ethics, Equity, Sustainability

Ethics

Artistic integrity preserved, user autonomy enhanced, harm reduced

Equity

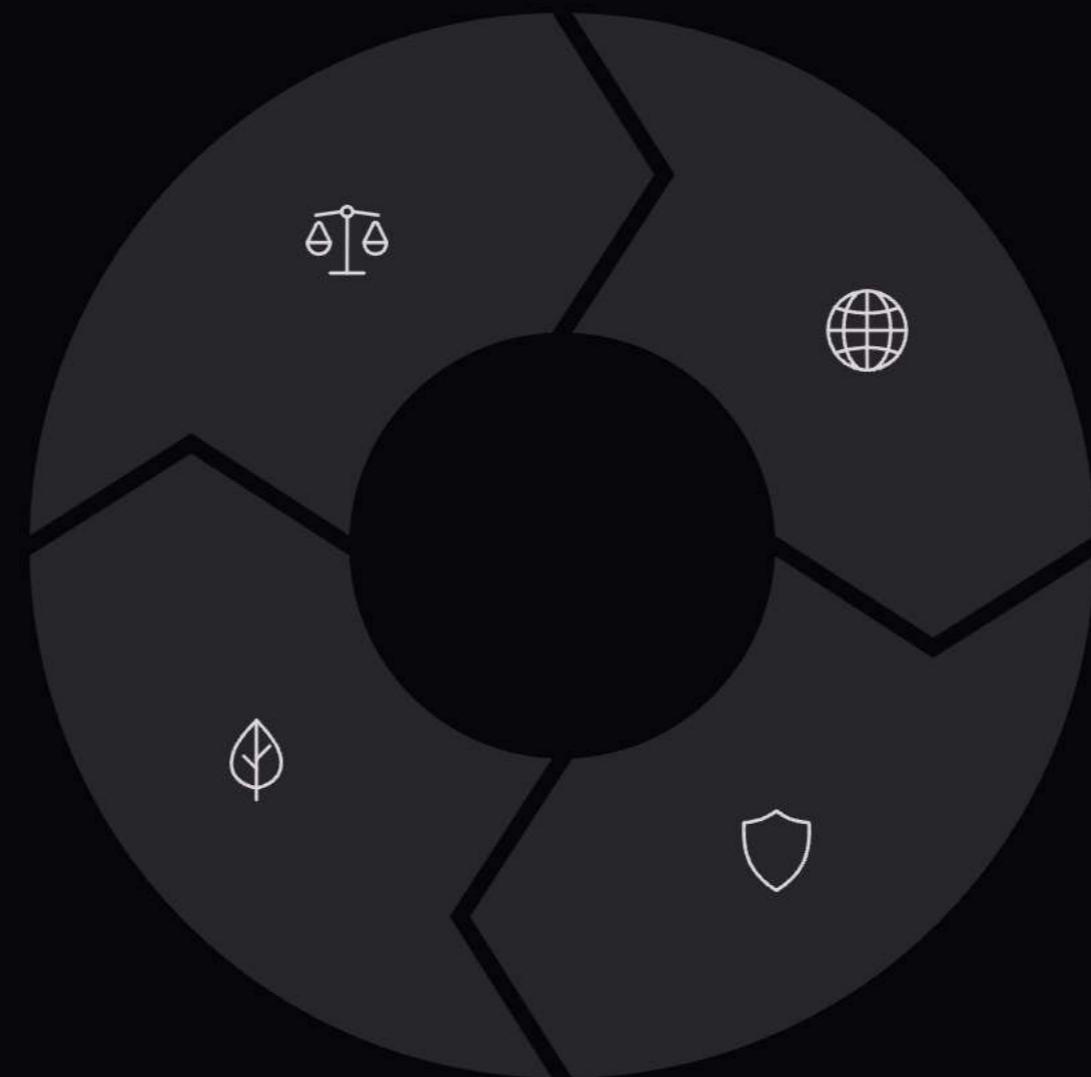
Triple win scenario, for viewers, for OTT-platforms and creators.

Sustainability

Digital well-being, family cohesion, social ESG pillar

Transparency

Clear explanations, auditable decisions, user trust



Impact: Transforming the Streaming Experience



For Families

Restored co-viewing, reduced stress,
trust in platforms



For Platforms

Broader audience reach, regulatory
compliance, ESG leadership



For Creators

Artistic freedom maintained, wider
distribution without censorship

Next time, Netflix and chill with your loved ones—enjoy the art at your convenience, as art is subjective.