PRD – AI-Based Anti-Piracy Content Protection System

1. Project Title

Dual-Signal AI System for Detecting Pirated Movie Content on Telegram

2. Theme & Problem Statement

Theme: Artificial Intelligence / Machine Learning
Problem Statement: Anti-Piracy Content Protection

3. Problem Description

Movie piracy has rapidly shifted to Telegram, where high-traffic public channels distribute newly released movies within hours of release. Pirates frequently manipulate videos by adding betting ads, pop-up banners, noise, cropping, or partial clips, making traditional screenshot-based detection unreliable.

Existing systems fail when visual frames are blocked, videos are cropped or cam-recorded, or only partial scenes are shared.

4. Proposed Solution

We propose an AI-based dual-signal piracy detection system that automatically identifies pirated movie content on Telegram using both visual and audio verification. The system monitors channels, analyzes newly uploaded videos, and verifies piracy using producer-provided reference data.

5. Key Innovation

Visual Verification: Producers provide 20 official screenshots with fixed timestamps. Frames extracted from Telegram videos are compared using perceptual similarity matching. If 10 or more screenshots match, visual piracy is confirmed.

Audio Verification: Producers provide 5 continuous audio clips (~3 minutes total). Audio is extracted from the video and matched using audio fingerprinting. If 3 or more clips match, piracy is confirmed.

6. Decision Logic

If visual verification succeeds, piracy is confirmed regardless of audio results. If visual verification fails but audio verification succeeds, piracy is still confirmed. If both partially succeed, the result is marked as medium confidence. If both fail, the content is ignored.

7. System Workflow

1. Monitor public Telegram channels at fixed intervals.

2. Detect newly uploaded video content.

3. Extract screenshots and audio using producer-provided timeframes.

4. Perform AI-based visual and audio similarity matching.

5. Apply decision logic and confirm piracy.

6. Generate evidence-based report for takedown.

8. Scope

Included: Public Telegram channels, automated detection, AI-based matching, evidence generation.

Excluded: Dashboards, private channel access without authorization, content redistribution.

9. Ethical & Legal Considerations

Only public Telegram channels are monitored. No redistribution or sharing of copyrighted content occurs. The system is intended strictly for piracy detection and legal reporting by rights holders.

10. Expected Impact

Faster piracy detection, higher accuracy despite ads or overlays, stronger legal evidence for takedown, and reduced revenue loss for movie producers.

11. One-Line Summary

Even if pirates hide movies behind ads or betting banners, they cannot hide the audio and scene structure—our AI system detects piracy using both.