



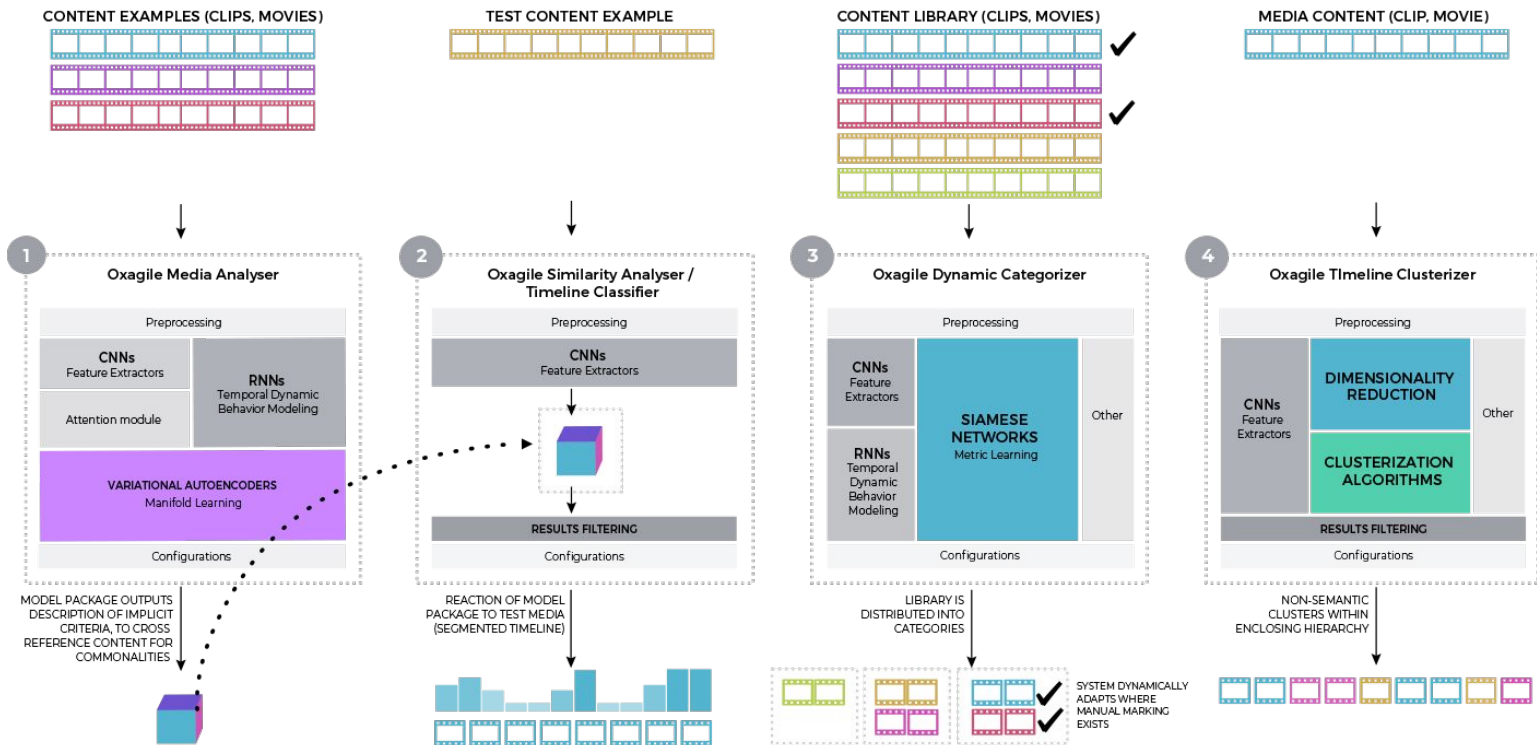
oxagile

NEXT-GEN OTT SOLUTIONS PARTNER

Decoding Content DNA

Leverage non-supervised content classification to supercharge video processing

CV Framework Architecture



Example 1: Detecting content of a particular type

We created 90-minutes of footage ,consisting of 12 different content pieces (series, shows, movies etc). The task for the system was to identify the 4 particular shows within this piece of content: “Pioneer Woman”, “Game of Thrones”, “TOP Gear”, “Ultimate Survival”.

Method: Ingested 2-4 minutes of footage from the corresponding shows to the AI engine

Result: All 4 shows successfully identified in the timeline

Possible application areas: Automated QC, automating EPG vs. actual linear playback compliance

Detecting content type

Library

Movie_set
1:33:58

0:00:00 / 1:33:37

4 specific shows successfully detected

Settings

PIONEER WOMAN
Score threshold 1.00 / 1.00

GAME OF THRONES
Score threshold 1.00 / 1.00

TOP GEAR
Score threshold 1.00 / 1.00

ULTIMATE SURVIVAL
Score threshold 1.00 / 1.00

Content Block	1	2	3	4	5	6	7	8	9	10	11	12
Pioneer Woman	1	2	3	4	5	6	7	8	9	10	11	12
Game of Thrones	1	2	3	4	5	6	7	8	9	10	11	12
TOP Gear	1	2	3	4	5	6	7	8	9	10	11	12
Ultimate Survival	1	2	3	4	5	6	7	8	9	10	11	12

90-minute timeline consisting of 12 different content blocks


Detecting content type

Ingested footage (TOP Gear example)

Sources for TOP Gear

← 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 →

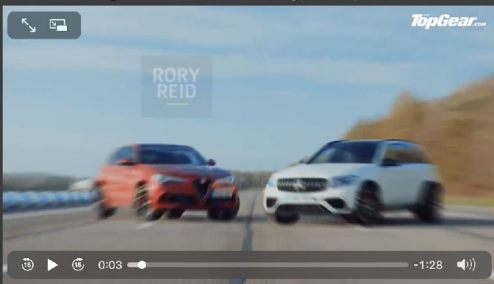
Abarth 595 Comp vs Abarth 124 Spider - Drag Races - Top Gear



Jack Rix

0:02 -1:34


Alfa Romeo Stelvio QV vs Mercedes-AMG GLC 63 - Drag Races - Top Gear



RORY REID


0:03 -1:28

Ariel Atom 3.5 vs Ariel Nomad vs BAC Mono vs Caterham 620S - Top Gear- Drag Races



0:01 -2:53

Ariel Nomad vs RR SVR - Top Gear- Drag Races



0:02 -1:49

Settings

PIONEER WOMAN

Score threshold 1.00 / 1.00

GAME OF THRONES

Score threshold 1.00 / 1.00

TOP GEAR

Score threshold 1.00 / 1.00

ULTIMATE SURVIVAL

Score threshold 1.00 / 1.00

Detecting content type

Library

Movie set
1:33:58

localhost

Settings

PIONEER WOMAN
Score threshold 1.00 / 1.00

GAME OF THRONES
Score threshold 1.00 / 1.00

TOP GEAR
Score threshold 0.00 / 1.00

ULTIMATE SURVIVAL
Score threshold 1.00 / 1.00

1:14:11 / 1:33:57

0:00:00 0:10:00 0:20:00 0:30:00 0:40:00 0:50:00 1:00:00 1:10:00 1:20:00 1:30:00

Pioneer Woman

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

Game of Thrones

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

TOP GEAR

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

Ultimate Survival

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

Content type recognition by score filtering ("TOP Gear" example)

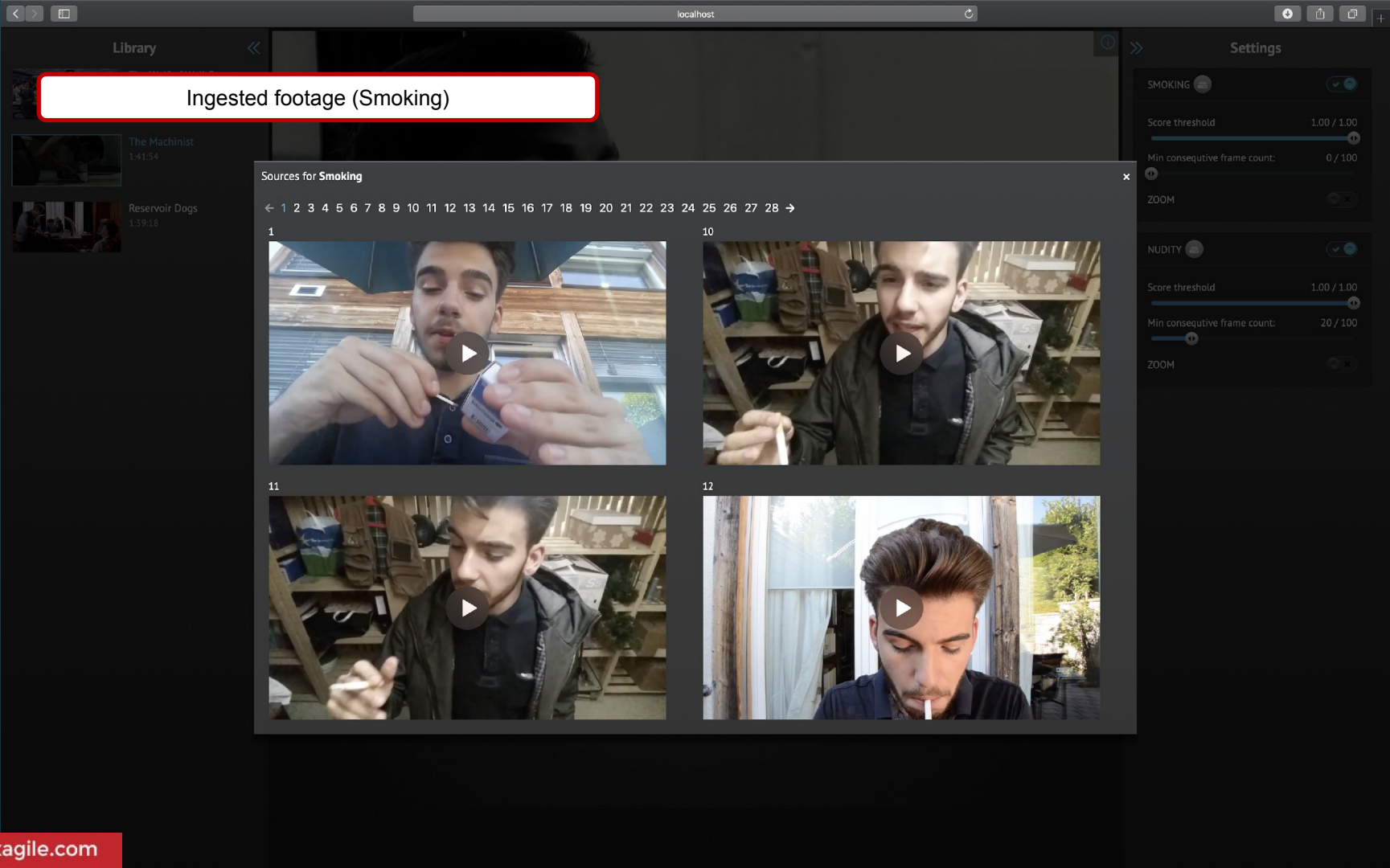
Example 2: Detecting particular scenes (not objects!).

Method: Ingested 2-4 minutes footage / compilations of the corresponding actions / scenes

Result: Scenes successfully identified across multiple movies

Possible application areas: Automated compliance for violence, smoking, sexual scenes, etc.

Detecting particular scenes (not objects!)



Ingested footage (Violence – Artificial Blood)

- The Machinist
1:41:54
- Reservoir Dogs
1:39:18

Sources for Violence

50 Gallons Of Fake Blood in Bathtub! (Halloween Bath Challenge)



How Fake Blood Is Made For Movies Movies Insider



Settings

- SMOKING
- Score threshold 1.00 / 1.00
- Min consecutive frame count: 0 / 100
- ZOOM
- VIOLENCE
- Score threshold 1.00 / 1.00
- Min consecutive frame count: 0 / 100
- ZOOM

Detecting particular scenes (not objects!)

The screenshot displays a video analysis application interface. On the left is a 'Library' panel with three movie entries: 'The Wolf of Wall Street' (2:59:52), 'The Machinist' (1:41:54), and 'Reservoir Dogs' (1:39:18). The main area features a video player showing a scene from 'The Machinist' with a man smoking. Below the video is a timeline from 0:00:00 to 1:40:00. Underneath the timeline are two detection tracks: 'Smoking' and 'Nudity', both showing blue vertical bars indicating detected scenes. A settings panel on the right is highlighted with a red border and contains the following controls:

- SMOKING** (toggle on):
 - Score threshold: 1.00 / 1.00
 - Min consecutive frame count: 0 / 100
 - ZOOM: (toggle off)
- NUDITY** (toggle on):
 - Score threshold: 1.00 / 1.00
 - Min consecutive frame count: 20 / 100
 - ZOOM: (toggle off)

Red arrows point from the 'Smoking' and 'Nudity' tracks to a text box at the bottom.

“The Machinist” movie – Detected smoking scenes, nudity scenes

Detecting particular scenes (not objects!)

The screenshot displays a video player interface for the movie "The Machinist". The video is paused at 0:15:09. Below the video, there are two tracks: "Smoking" and "Nudity". The "Smoking" track shows a blue bar chart indicating detection scores over time. A red box highlights the "Score threshold" for the "SMOKING" settings, which is set to 0.08 / 1.00. The "Nudity" track shows a blue bar chart indicating detection scores over time. The "Nudity" settings show a score threshold of 1.00 / 1.00 and a min consecutive frame count of 20 / 100.

"The Machinist" movie – Smoking Scenes Detection Scores



Detecting particular scenes (not objects!)

The screenshot displays a video player interface for the movie "Reservoir Dogs". The main video area shows a scene with two men, one of whom has blood on his face. Below the video is a timeline with a playhead at 0:13:44 / 1:39:18. Underneath the timeline are three tracks: "Smoking" and "Violence". The "Smoking" track shows several vertical bars indicating detected smoking scenes. The "Violence" track shows a dense series of vertical bars indicating detected violence scenes. A "Settings" panel on the right is highlighted with a red border and contains the following controls:

- SMOKING** (toggle on):
 - Score threshold: 1.00 / 1.00
 - Min consecutive frame count: 0 / 100
 - ZOOM: (toggle off)
- VIOLENCE** (toggle on):
 - Score threshold: 1.00 / 1.00
 - Min consecutive frame count: 0 / 100
 - ZOOM: (toggle off)

Red arrows point from the "Smoking" and "Violence" tracks to the text box below. A red box highlights the "Settings" panel.

"Reservoir Dogs" movie – Detected violence scenes, smoking scenes

Detecting particular scenes (not objects!)

The screenshot shows a video player interface for the movie "The Wolf of Wall Street". The main video area displays a scene with Leonardo DiCaprio and a woman. Below the video is a timeline from 0:00:00 to 2:59:52. Underneath the timeline are two tracks: "Smoking" and "Nudity". The "Smoking" track shows a single blue bar between 0:30:00 and 0:35:00. The "Nudity" track shows multiple blue bars indicating detected nudity scenes throughout the video. On the left, a "Library" panel lists three movies: "The Wolf of Wall Street" (2:59:52), "The Machinist" (1:41:54), and "Reservoir Dogs" (1:39:18). On the right, a "Settings" panel is open, showing controls for "SMOKING" and "NUDITY". Both settings have a "Score threshold" slider set to 1.00 / 1.00 and a "Min consecutive frame count" slider. The "SMOKING" setting has a frame count of 0 / 100, while the "NUDITY" setting has a frame count of 30 / 100. A red box highlights the "Settings" panel. A red line connects the "Settings" panel to a text box at the bottom.

"The Wolf of Wall Street" movie – Detected nudity scenes, smoking scenes

Example 3: Detecting ad insertions, anomalies or scenes of a similar nature

Method: Video footage clusterization to detect content anomalies

Result: Ad scenes (insertions) successfully identified inside the 'feature content'

Possible application areas: Automated ad removal / replacement (for example in Linear-to-VoD packaging, etc.)

Content clustering: detecting ad insertions

Library

- Merlin series 0:51:45
- My Boss's Daughter 1:39:53

КИНОКОМЕДИЯ

СЕГОДНЯ

КАПИТАН КРЮК

КИНОХИТ

19:00

0:08:22 / 1:39:53

0:00:00 0:10:00 0:20:00 0:30:00 0:40:00 0:50:00 1:00:00 1:10:00 1:20:00 1:30:00

CLUSTERS

Number 2 + -

Selected:

422
427

Reset

Display ID:

ZOOM

Frames in window: 2500 / 5000

COLOR SOURCE

Center Plane Heatmap

COLOR SOURCE OPTIONS

Hue: 0° / 360°

Intensity: 50 / 100

Contrast: 8.0 / 8.0

Cut-off: [0, 100]

Distribution:

Filter:

Ad Ingestion detected in "My Boss's Daughter" movie

Content clustering by scene similarity: decoding content DNA

Library

- Merlin series 0:51:45
- My Boss's Daughter 1:39:53

КИНОКОМЕДИЯ

СЕГОДНЯ

КАПИТАН КРЮК

КИНОХИТ

19:00

0:08:22 / 1:39:53

0:00:00 0:10:00 0:20:00 0:30:00 0:40:00 0:50:00 1:00:00 1:10:00 1:20:00 1:30:00

0 1 0 1 0 1 0 1 0 1 0

Further content clustering by scene similarity

Settings

TIMELINE

CLUSTERS

Number 100 +

Selected: 5, 11, 12, 14

Reset

Display ID:

ZOOM

Frames in window: 2500 / 5000

COLOR SOURCE

Center Plane Heatmap

COLOR SOURCE OPTIONS

Hue: 0° / 360°

Intensity: 50 / 100

Contrast: 4.6 / 4.6

Cut-off: [0, 100]

Distribution:

Filter:

Example 4: Enriching meta, granular genre identification, and more!

Method: Video footage clustering, combined with scene recognition

Result: Automatic metadata enrichment based on content itself

Possible application areas: In-depth personalization and recommendations, plagiarism detection, recognizing emotional journeys, smarter ad placement techniques, automated content highlights compilations, and muchmore!

Meta-data enrichment, granular content analysis: "Fast Five"

The screenshot displays a video analysis application interface. On the left is a 'Library' panel with a scrollable list of video clips. Each clip includes a thumbnail, title, duration, and a set of metadata tags with their respective percentages. The 'Fast.Five' clip at the bottom is highlighted with a red box. The central part of the interface is a video player showing a scene with a black SUV on a street. Below the video is a timeline with a playhead at 1:47:57 / 2:10:21 and an audio waveform. On the right is a 'Settings' panel with a 'TAGS' section containing 'faces', 'bars', and 'fights' buttons, and a 'RACES' section with a 'Score threshold' slider set to 1.00 / 1.00. A red box highlights the 'TAGS' section, and a red arrow points from it to the 'Fast.Five' clip in the library. Another red arrow points from the 'RACES' section to the 'Fast.Five' clip. A third red arrow points from the 'Fast.Five' clip to the 'RACES' section.

Library

- disasters - 10% landscapes - 9.7%
- bar,alcohol - 0.4% fights - 0%
- races - 0% omnious scenes - 0%
- food - 0% kisses - 0%
- transformers fights - 0%

The.Shining
1:59:38

- omnious scenes - 48.3%
- cooking show - 11.1% bar,alcohol - 6.9%
- kisses - 2.4% landscapes - 2.3%
- fights - 0% races - 0% disasters - 0%
- transformers fights - 0%

Transformers.The.Last.Knig
2:34:38

- fighting transformers - 42.5% disasters - 14.3%
- races - 8.3% cooking show - 3.7%
- landscapes - 1.3% ocean - 1.3%
- fights - 0% kisses - 0%
- omnious scenes - 0% bar, alcohol - 0%

Fast.Five
2:10:21

- races - 15.8% fights - 2.2%
- bar,alcohol - 2.2% transformers fights - 0%

Settings

TAGS

- faces
- bars
- fights

RACES

Score threshold 1.00 / 1.00

ZOOM

Meta-data enrichment, granular content analysis: "Fast Five"

The interface displays a video library with various metadata tags and a detailed view of sources for a specific category.

Library

Ingested footage (Car Races)

Settings

Tags: races, bars, fights

RACES: Score threshold: 1.00 / 1.00

ZOOM:

Sources for races

← 1 2 3 4 5 6 7 8 9 10 →

Houston STREET RACING - Procharged Camaro, 850hp Hellcat, Whipple Terminator, 750hp GT-R and more!!!_Trim2

NICE CARS & DRIFT COMPILATION - NFS HipHop Mix [MUSICVIDEO]_Trim5

The.Shining
1:59:38

omnious scenes - 48.3%

cooking show - 11.1% baralcohol - 6.9%

kisses - 2.4% landscapes - 2.3%

fights - 0% races - 0% disasters - 0%

transformers fights - 0%

Transformers.The.Last.Knig
2:34:38

fighting transformers - 42.5% disasters - 14.3%

races - 8.3% cooking show - 3.7%

landscapes - 1.3% ocean - 1.3%

fights - 0% kisses - 0%

omnious scenes - 0% bar, alcohol - 0%

Fast.Five
2:10:21

races - 15.8% fights - 2.2%

transformers fights - 0%

STREET CAR VIDEO

500hp RX7 vs Supercharged Challenger STREET RACE

BEST MOMENTS OF RALLY

1:20 - 2:06

Meta-data enrichment, granular content analysis: "The Notebook"

The screenshot displays a video analysis application interface. The central video player shows a scene from "The Notebook" with a timeline and audio waveform. The left sidebar lists titles with their metadata, and the right sidebar shows settings for tags and score thresholds. Red boxes highlight specific areas: the top-left metadata for "The Notebook", the "races - 0%" tag for "Project A", and the "TAGS" section in the settings panel.

Library

The Notebook (2:03:49)

- bar, alcohol - 8.1%
- kisses - 5.7%
- landscapes - 3.2%
- cooking show - 2.4%
- fighters - 0%
- races - 0%
- omniscenes - 0%
- disasters - 0%
- transformers fights - 0%

Project A (1:37:51)

- fighters - 40.6%
- bar, alcohol - 6.2%
- ocean - 1%
- races - 0%
- kisses - 0%
- omniscenes - 0%
- disasters - 0%
- cooking show - 0%
- transformers fights - 0%
- landscapes - 0%

Hannibal (0:43:10)

- cooking show - 23.2%
- bar, alcohol - 9.3%
- kisses - 7%
- fighters - 0%
- races - 0%
- omniscenes - 0%
- disasters - 0%
- transformers fights - 0%
- landscapes - 0%

The Woman in Black (1:35:19)

- omniscenes - 17.6%
- bar, alcohol - 7.9%
- fighters - 0%

Settings

TAGS

- kisses
- landscapes
- bars, alcohol
- cooking show

KISSES

Score threshold: 1.00 / 1.00

ZOOM: [toggle]

Meta-data enrichment, granular content analysis: "The Notebook"

The screenshot displays a web-based video analysis application. At the top, a navigation bar includes a 'Library' tab and a 'Settings' panel on the right. The 'Library' section shows a list of video titles with associated metadata tags. A search bar at the top of the library is highlighted with a red box and contains the text 'Ingested footage (Kisses)'. Below the search bar, a list of videos is shown, each with a set of tags representing different content categories and their percentages. The 'Sources for kisses' section is open, displaying a list of search results for the keyword 'kisses'. The results include video titles, durations, and thumbnail images with play buttons. The 'Settings' panel on the right allows for filtering by tags (kisses, landscapes, bars, alcohol, cooking show) and adjusting a 'Score threshold' slider set to 1.00 / 1.00.

Library

Settings

Tags: kisses, landscapes, bars, alcohol, cooking show

KISSES

Score threshold: 1.00 / 1.00

ZOOM

Ingested footage (Kisses)

bar,alcohol - 8.1% kisses - 5.7%

landscapes - 3.2% cooking show - 2.4%

fights - 0% races - 0%

omnious scenes - 0% disasters - 0%

transformers fights - 0%

Project.A
1:37:51

fights - 40.6% bar,alcohol - 6.2%

ocean - 1% races - 0% kisses - 0%

omnious scenes - 0% disasters - 0%

cooking show - 0% transformers fights - 0%

landscapes - 0%

Hannibal
0:43:10

cooking show - 23.2% bar,alcohol - 9.3%

kisses - 7% fights - 0% races - 0%

omnious scenes - 0% disasters - 0%

transformers fights - 0% landscapes - 0%

The.Woman.In.Black
1:35:19

omnious scenes - 17.6% bar,alcohol - 7.9%

fights - 0%

Sources for kisses

← 1 2 →

41 sweet kiss scene korean drama 2018.

Bhojpuri non stop kissing (online-video-cutter.com)

HRITHIK ROSHAN KISSING SCENES IN BOLLYWOOD MOVIE TOP 5 HRITHIK ROSHAN KISSING SCENES

Meghan Markle Wedding Scene On Suits Meghan Markle Rachel Kissing Scenes

oxagile.com

Meta-data enrichment, granular content analysis: "2012"

The screenshot displays a video analysis application interface. The central video player shows a scene from the movie "2012" with a timestamp of 0:49:30 / 2:37:49. Below the video is a timeline and an audio waveform. The left sidebar, titled "Library", lists three videos with their respective metadata tags:

- The Woman in Black** (1:35:19): omnious scenes - 17.6%, bar,alcohol - 7.9%, landscapes - 6.1%, fights - 0%, races - 0%, kisses - 0%, disasters - 0%, food - 0%, transformers fights - 0%.
- 2012** (2:37:49): disasters - 10%, landscapes - 9.7%, bar,alcohol - 0.4%, fights - 0%, races - 0%, omnious scenes - 0%, food - 0%, kisses - 0%, transformers fights - 0%.
- The Shining** (1:59:38): omnious scenes - 48.3%, cooking show - 11.1%, bar,alcohol - 6.9%, kisses - 2.4%, landscapes - 2.3%, fights - 0%, races - 0%, disasters - 0%, transformers fights - 0%.
- Transformers: The Last Knight** (2:34:38): fighting transformers - 42.5%, disasters - 14.3%.

The right sidebar, titled "Settings", shows the "TAGS" section with buttons for "disasters", "bars, alcohol", and "landscapes". The "DISASTERS" section includes a "Score threshold" slider set to 1.00 / 1.00 and a "ZOOM" toggle.

Red annotations highlight the "2012" video entry in the library, the "disasters" tag in the settings, and the corresponding "disasters" bar in the video player's timeline visualization.

Meta-data enrichment, granular content analysis: "2012"

The screenshot displays a video library interface with a search filter for "Disasters". The interface includes a sidebar with a list of video thumbnails and their associated tags. The main content area shows a grid of video thumbnails, each with a play button and a progress bar. A red box highlights the search filter "Ingested footage (Disasters)".

Library

Settings

Tags: disasters, bars, alcohol, landscapes

DISASTERS

Score threshold: 1.00 / 1.00

ZOOM

Ingested footage (Disasters)

omnious scenes - 17.6% bar,alcohol - 7.9%

landscapes - 6.1% fights - 0%

races - 0% kisses - 0% disasters - 0%

food - 0% transformers fights - 0%

2012
2:37:49

disasters - 10% landscapes - 9.7%

bar,alcohol - 0.4% fights - 0%

races - 0% omnious scenes - 0%

food - 0% kisses - 0%

transformers fights - 0%

The.Shining
1:59:38

omnious scenes - 48.3%

cooking show - 11.1% bar,alcohol - 6.9%

kisses - 2.4% landscapes - 2.3%

fights - 0% races - 0% disasters - 0%

transformers fights - 0%

Transformers.The.Last.Knig
2:34:38

fighting transformers - 42.5% disasters - 14.3%

Sources for disasters

← 1 2 3 4 5 6 7 →

Natural Disasters Caught On Video 2018 !

10 - IMPRESSIONANTES DESTRUIÇÕES DE TORNADOS

ONLY TORNADO! NOT FOR REBROADCAST

17 BEST Building Demolitions EVER 🎆🏠🔥 [TNT Channel]

2011 Japan Tsunami Ofunato [stabilized again with Deshaker]



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