

Enhancing Access to and Engagement with Audiovisual Collections



Johan Oomen

AI4TV 2019

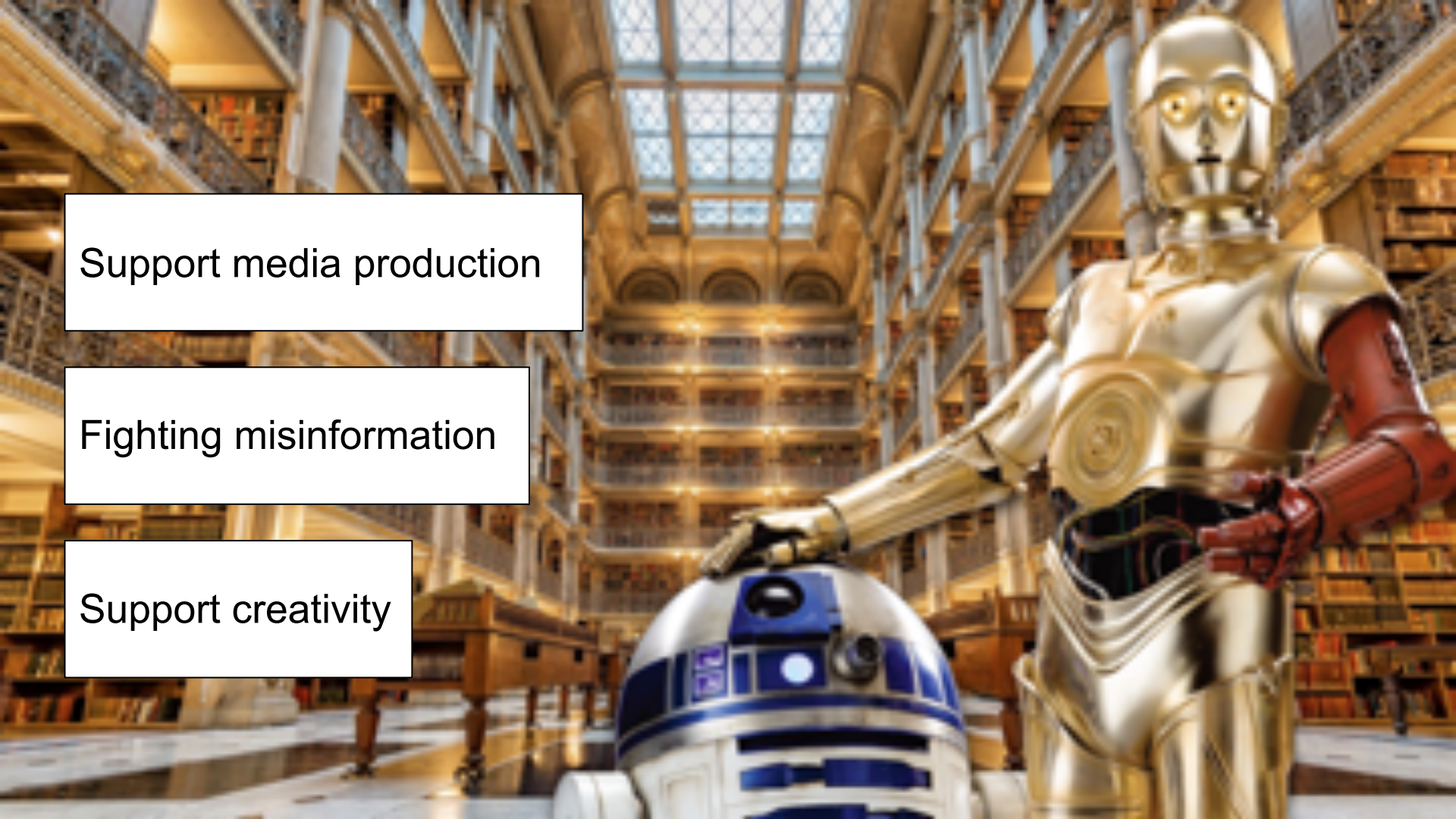
@johanoomen



Support media production

Fighting misinformation

Support creativity





SOUND AND VISION

Werkende tentoon van beeld en geluid

geluid tentoon van beeld

Expositie van 2014

SOUND AND VISION



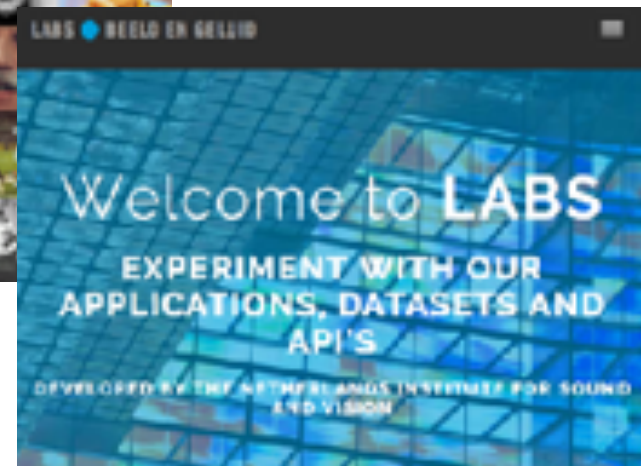




Museum



Archive



Knowledge institute

Mission:

“Improve people’s lives in and with media by archiving, exploring and contextualising it, whereby the freedom of thought and expression in text, image and sound is paramount.”

Born-digital heritage



- YouTube
- Websites
- Interactive documentaries
- Social media
- Podcasts
- GIF animations
- Games

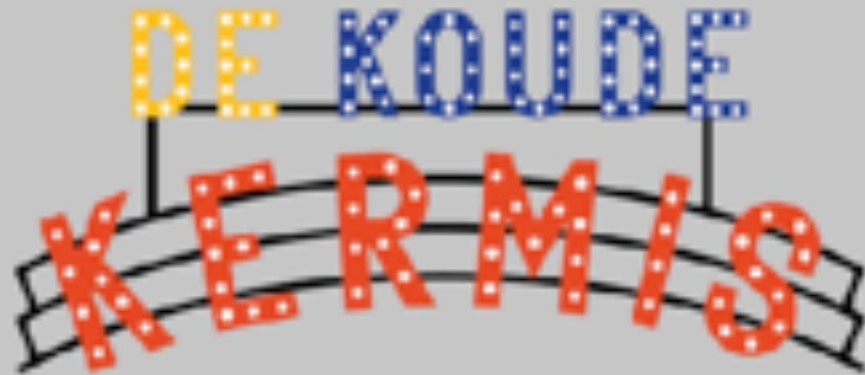
Examples of games



GAME ARCADE




TIME TRAVELLERS



DE KOUDE
KERMIS

A stylized neon sign with the text 'DE KOUDE KERMIS'. The words 'DE KOUDE' are in blue and 'KERMIS' is in red. The letters are composed of small dots, giving them a pixelated or neon-like appearance. The sign is mounted on a black frame with two vertical supports. The background is a light gray.

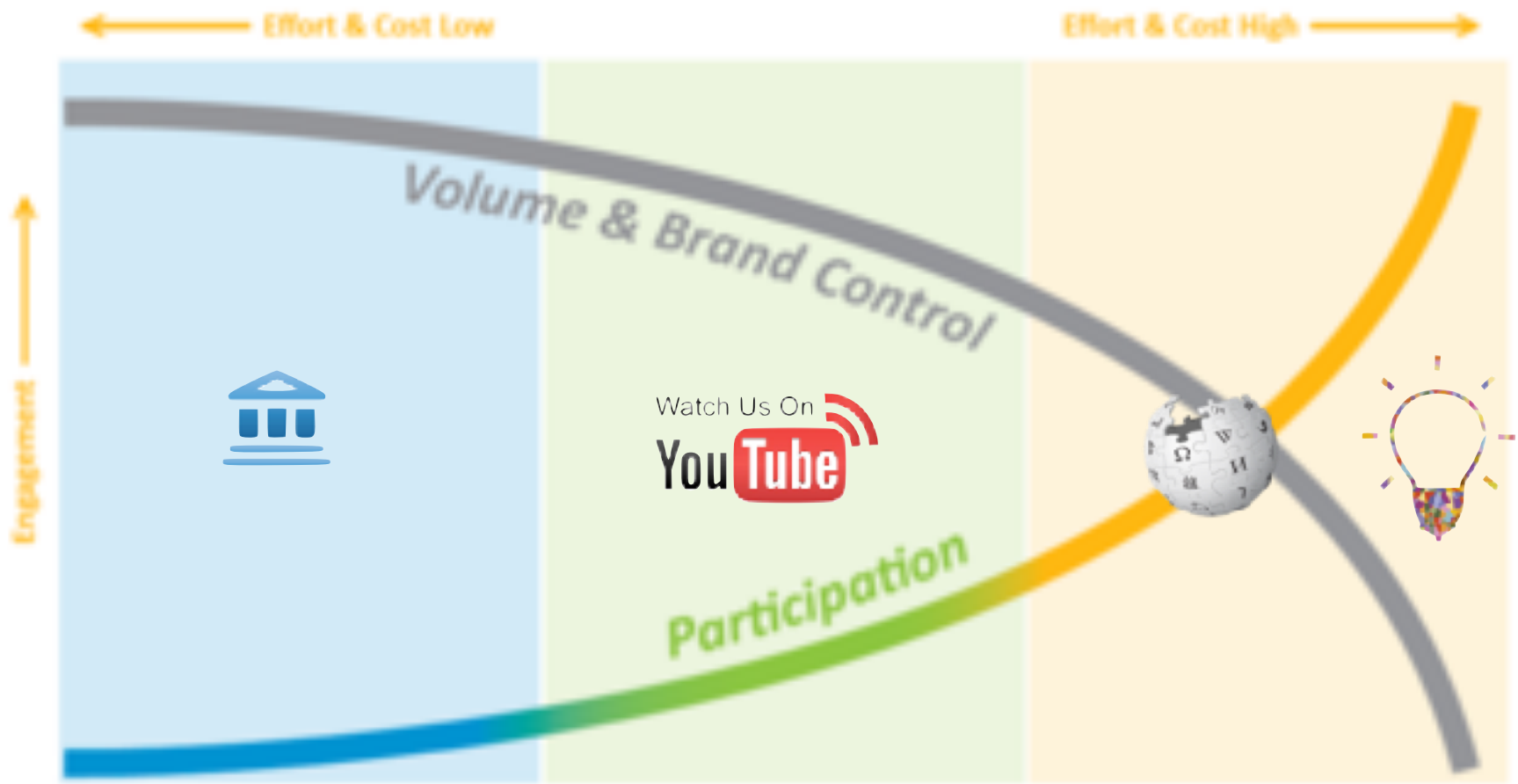


6 Petabytes of born-digital
& digitized video and
audio.

+ 8 Petabytes (~20.000
hours)
of digitized film.

SOUND AND VISION USERS

- General public
- Media Professionals
- Academia
- Education
- Heritage professionals



U zoekt:



Voer alleen in de zoekbalk een zoekterm of zoektermen in

Thuis > Home

Uw/Deel uw favorieten

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

WIL U HIEROP BELANGHEBBEN?



EEN BIETJE VEEL

1970-1971
Katharina Aggen, met, schiedkundige, schoolkousen



SCHOPPEN TROEF

1970-1971



HOLLYWOOD CONNECTION

1970-1971



TL

1970-1971



DE TELEVISIERECHTBANK

aflevering: De zaak: Warkensveld en Sterhuis
1970-1971



KOM ER MAAR EENS ACHTER

1970-1971



KOM ER MAAR EENS ACHTER

1970-1971



SPORTYISSEN

1970-1971

SOUND AND VISION



Storytelling platform Sound and Vision

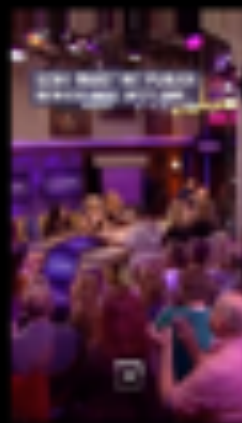
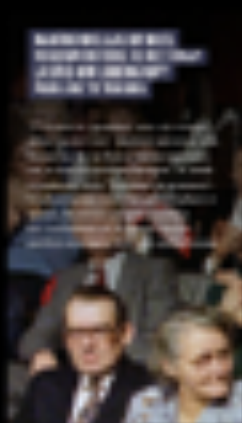
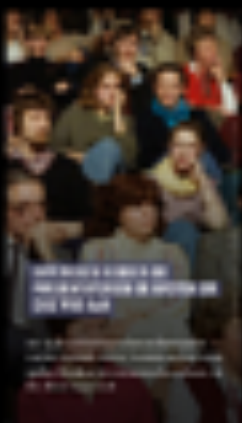
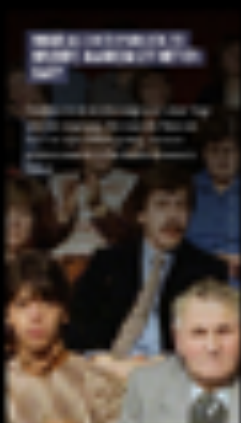
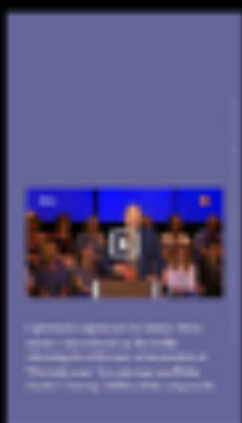
Story >

In English, for award entries

Platform >

In Dutch







Nederlands Instituut voor Beeld en Geluid

18.2K subscribers

SUBSCRIBE

HOME

VIDEOS

PLAYLISTS

COMMUNITY

CHANNELS

ABOUT



Het media-instituut van Nederland: Beeld en Geluid

11,720 views • 4 years ago

Wij houden het bij het verleden uit ons mediatheekbeleid

Het Nederlands Instituut voor Beeld en Geluid is één van de grootste mediahuizen in Europa. Het beheert geluid op het Media Park en het Museum Berlijn van 1 miljoen uur aan radio, televisie, film en muziek.

READ MORE

WITH BEELD EN GELUID



SUBSCRIBED



SUBSCRIBE



SUBSCRIBE

vpro the mind **of the** universe



keizer koninklijke

Dit Is The Mind of the Universe

Wat drijft vooraanstaande wetenschappers in hun zoektocht naar nieuwe kennis? In The Mind of the Universe laat Rubbert Dijkgraaf zien welke karaktereigenschappen de mens hebben gebracht tot een unieke prestatie: het bouwen van een wereldwijd netwerk van kennis.

van vpro ->

vanaf 7 mei op NPO 2

toezichtingen op de zondag om 12.00

wetenschap

over the mind of the universe

TELEVISION

About scientific knowledge

The Mind of the Universe is an international tv series about the rapid evolution of our knowledge. It explores the human destiny and the world of tomorrow through the eyes of great minds from all continents all over the globe.

The mind of the universe consists of ten episodes. In each episode, a typical human quality takes central stage, in which the scientists and their research are embedded.



EXPLORE

Open access video platform

To facilitate search and retrieval in this vast audiovisual archive of raw interview footage, we supported the project by building an online open access video platform.



[illegible]

- 5.000 videos and 1.842 sounds Wikimedia Commons
- 47% is used, across 5,500 Wikipedia articles
- Feb: 2019 - **5,3 miljoen pageviews**
- Since 2010, articles with Sound and Vision material have been viewed 440 million times



Annotations

Analog vs Digital

What's that all
over the floor?



Oh, the data is coming
in faster than our
computers can absorb.

© 1994 by J. K. Rowling

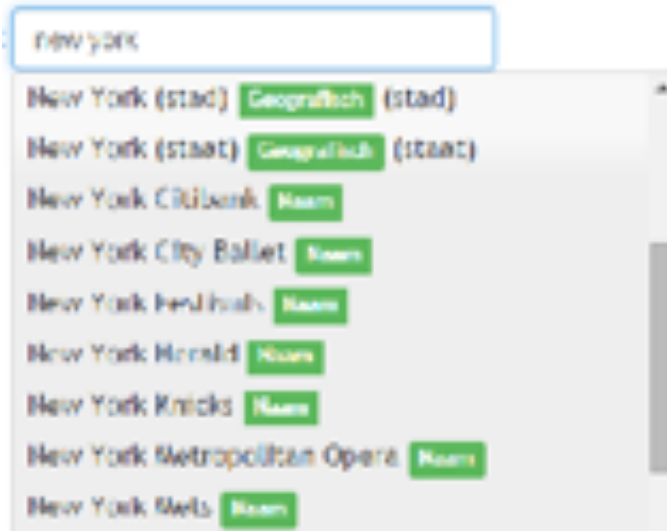
Metadata



- Production metadata
- Crowdsourcing
- Automatically generated metadata
- Manual annotations

Embedding the thesaurus

Tool that invisibly maps autocomplete tags to the Sound and Vision thesaurus - Integrated in production systems of public broadcasters





TAKING MACHINES TO THE TASK



Speech-to-text



Speaker labeling



Visual concept labeling



Facial recognition



Recommendation



Conversational search



Linked data publishing



Topic modeling



Emotion labeling



AI Principles – work in progress

Robust
Transparent
Inclusive
Supervised
Neutral
Safe
Accessible

Asset management system



ABC

Entity extraction
www.904Labs.com

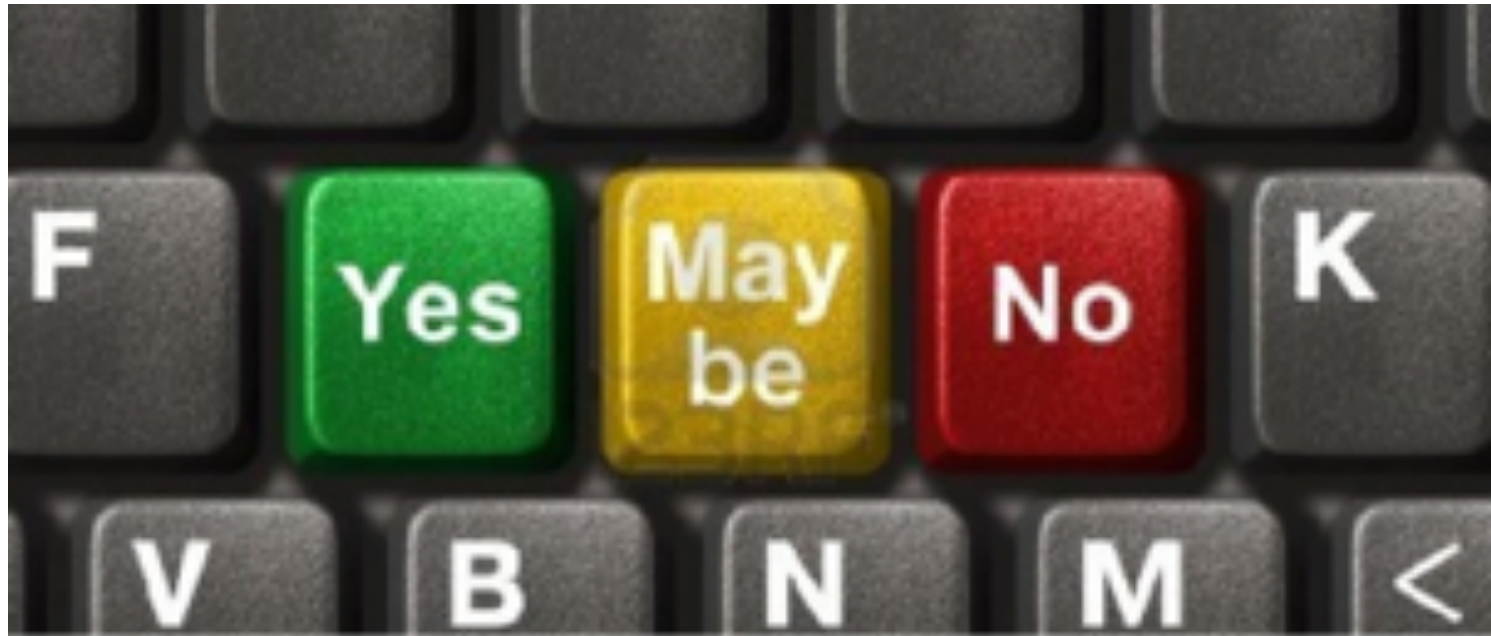


Speaker labeling
www.spraaklab.nl
(2.500+ models)



Face labeling
www.vicarvision.nl
(1.500+ models)

Traffic lights



Examples



3 out of 4



Amounts

472.695 automatic labeled thesaurus terms in our MAM system

2.500 speaker models & 904.476 fragments labeled with speakers

1.500 face models & 94.526 fragments labeled with faces/persons

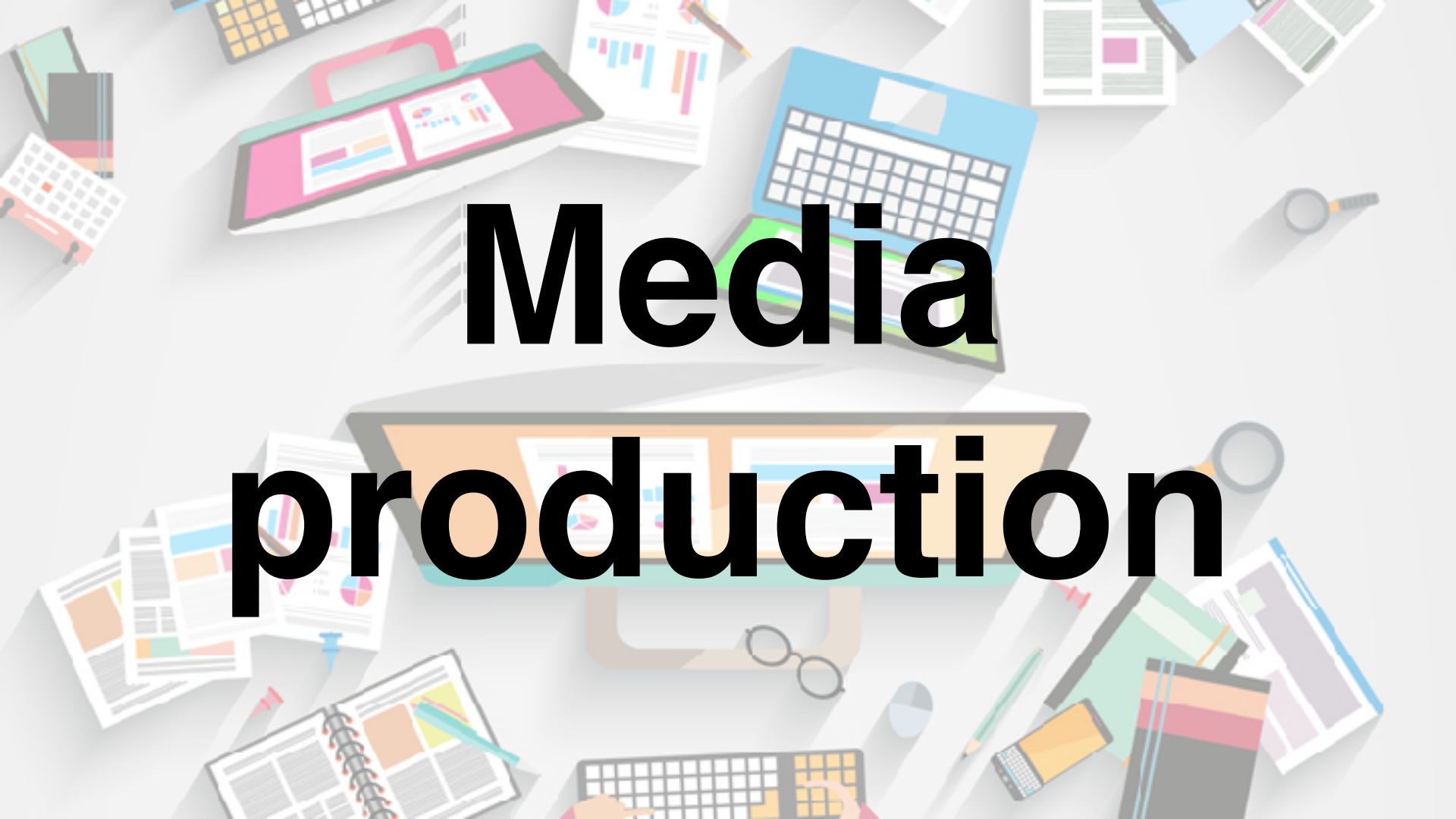
45.278 programmes with automatically generated metadata

2.072.141 programmes in our MAM

2%



100 %



Media production

Entity extraction

Input:

– Subtitles

Output:

- Thesaurus labels

- Subjects
- Person names
- Corporation names
- Locations



Speaker labeling



Face recognition



Future work: on-screen text extraction



These are all the **keyshots** from the **news video** *Airbus to retire A380, world's largest passenger jet*



Future work: video summaries



ReTV

Google

SHANGHAI
NEWS
100 TV 100

There are many ways to summarize this **news video**



Future work: video summaries



[← back](#)

d73f729cabc043d5edd0bc210aaf2019.mp4

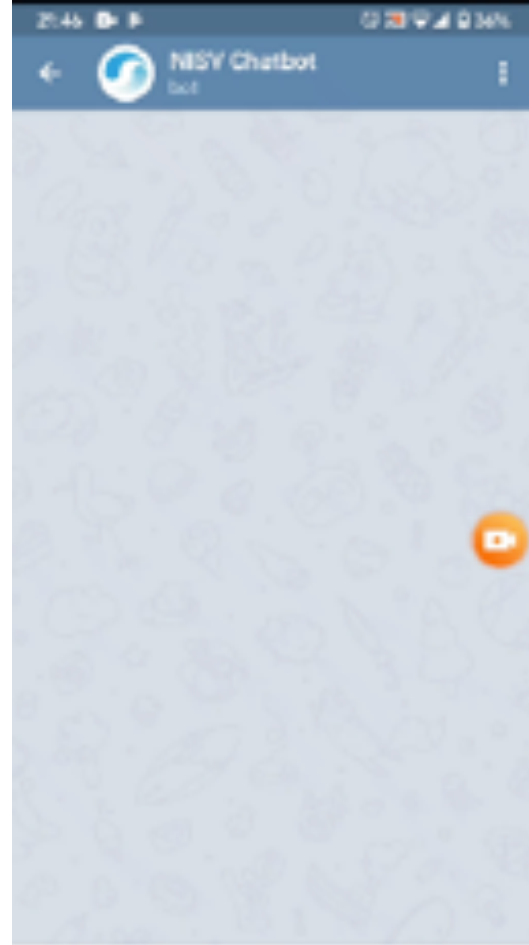


Resolution 720x576

Size 20.1 MB

Mime type video/mp4

Folder  infoName d73f729cabc043d5edd0bc210aaf2019.mp4 Content Type image [Post](#)[Edit](#)[Change Thumbnail](#)[Download](#)[Download Thumbnail](#)[Add Task](#)[Share](#)[Delete](#)



RESTART



**Fighting
misinformation**

Over time...

Share of airtime devoted to...

May 1, 2017 to April 18, 2018. 16-day rolling average.





Capture**Bias**

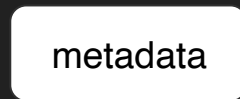
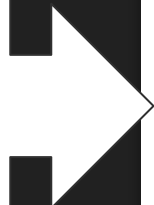
A human in the loop approach to detect episodic and thematic framing in news videos



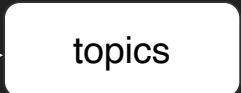
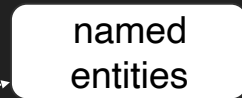
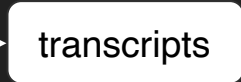


CaptureBias

Dataset: Videos with transcripts



title, uploader,
description, tags,
category, likes...



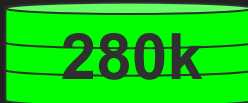
Subcollections



Videos



Transcripts



Metadata



CaptureBias

Framing Example: Crimea Case

"Annexation" VS "Independence"

■ "Annexation" ■ "Independence"



280k

Metadata

Average mention

Future work: video fingerprinting



Future work: video fingerprinting



[illegible]

GIFS

BEELD EN GELUID



BEELD EN GELUID



BEELD EN GELUID



I have no idea what the fuck im doing



352

50 Weeks @

211.3M

50 Weeks @

Total GBF Views



Top GBFs

1		38,176,440 Views
2		15,888,998 Views
3		13,102,890 Views
4		11,276,580 Views
5		8,216,888 Views





OPEN MEDIA ART



SOUND AND VISION



AI and Archives

- 1-How to manage uncertainty, errors, bias?
- 2-How can AI be integrated in production systems?
- 3-How can personalization and recommendation lead to automatic curation?
- 4-How does AI impact the “nature” of catalogues? What is gained/lost/changed?
- 5-How to move from automatic extraction to analysis/understanding?
- 6-How can AI models trained with contemporary data be used for legacy

Resources

bit.ly/AlandArchives

@johanoomen

