



VideoCLEF

Video Analysis and Retrieval Benchmark Evaluation

Martha Larson

Delft University of Technology

Gareth Jones

Dublin City University

<http://www.cdvp.dcu.ie/VideoCLEF>



Outline

- Introduction to the Cross-Language Evaluation Forum (CLEF)
- Presentation of VideoCLEF goals
- VideoCLEF 2008 Pilot
 - What happened?
 - What did we achieve?
- VideoCLEF 2009
 - What's happening?
- VideoCLEF 2010 and beyond
 - Where are we going?





Cross Language Evaluation Forum



Objectives of CLEF

- Promote research and stimulate development of multilingual IR systems for European languages
- Build a MLIA/CLIR research community
- Construct publicly available test-suites

By:

- Creation of evaluation infrastructure and organisation of regular evaluation campaigns for system testing
- Designing tracks/tasks to meet emerging needs and to stimulate research in the “right” direction

Major Goal: Encourage development of truly multilingual, multimodal systems

Grid@CLEF

CLEF-IP

LogCLEF

INFILE@CLEF

VideoCLEF

GeoCLEF

WebCLEF

ImageCLEF

QA@CLEF

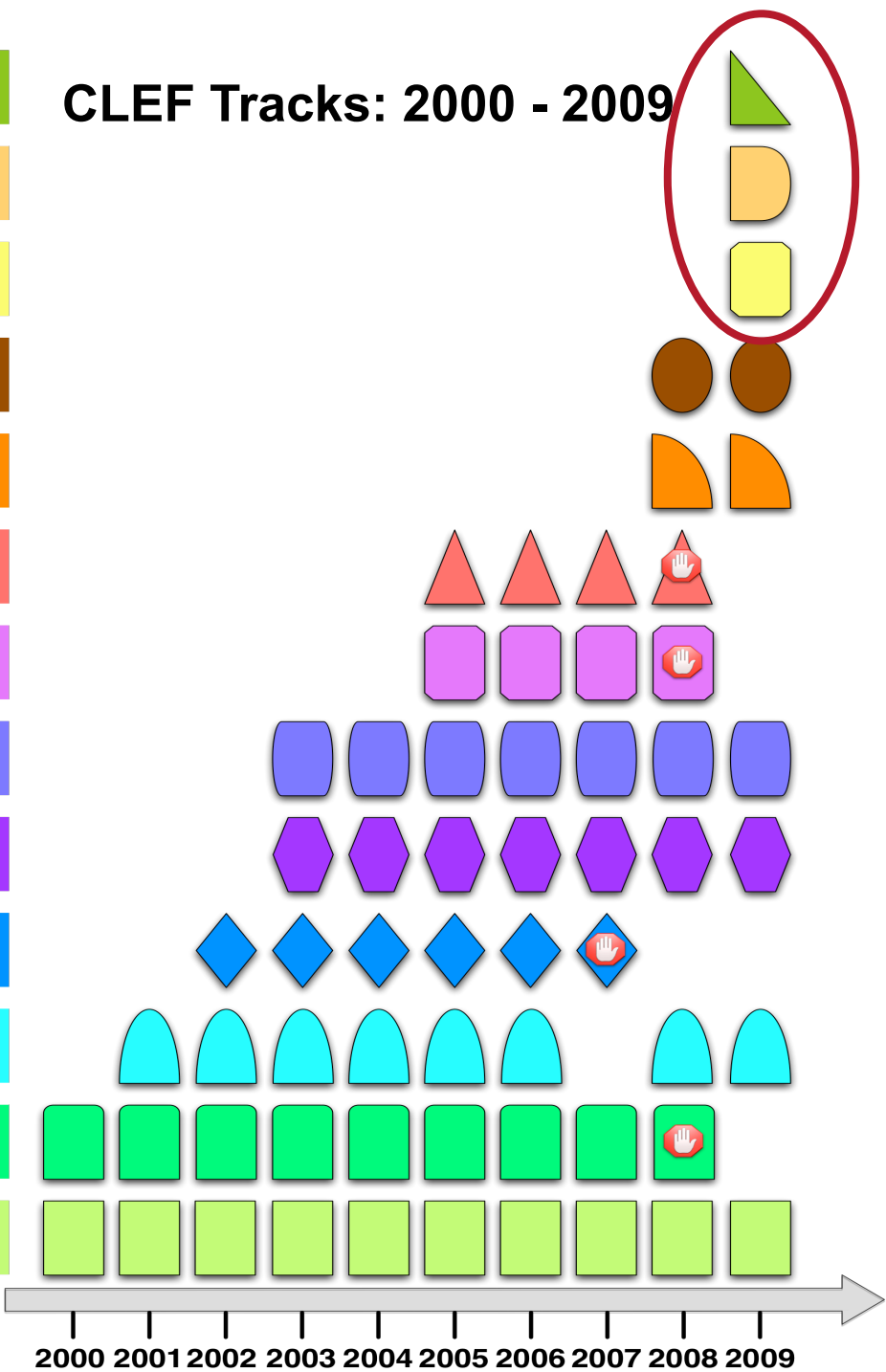
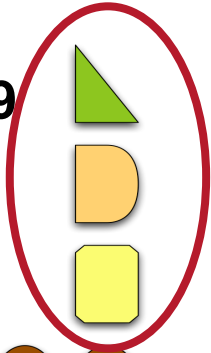
CL-SR

iCLEF

Domain-specific

Ad-hoc

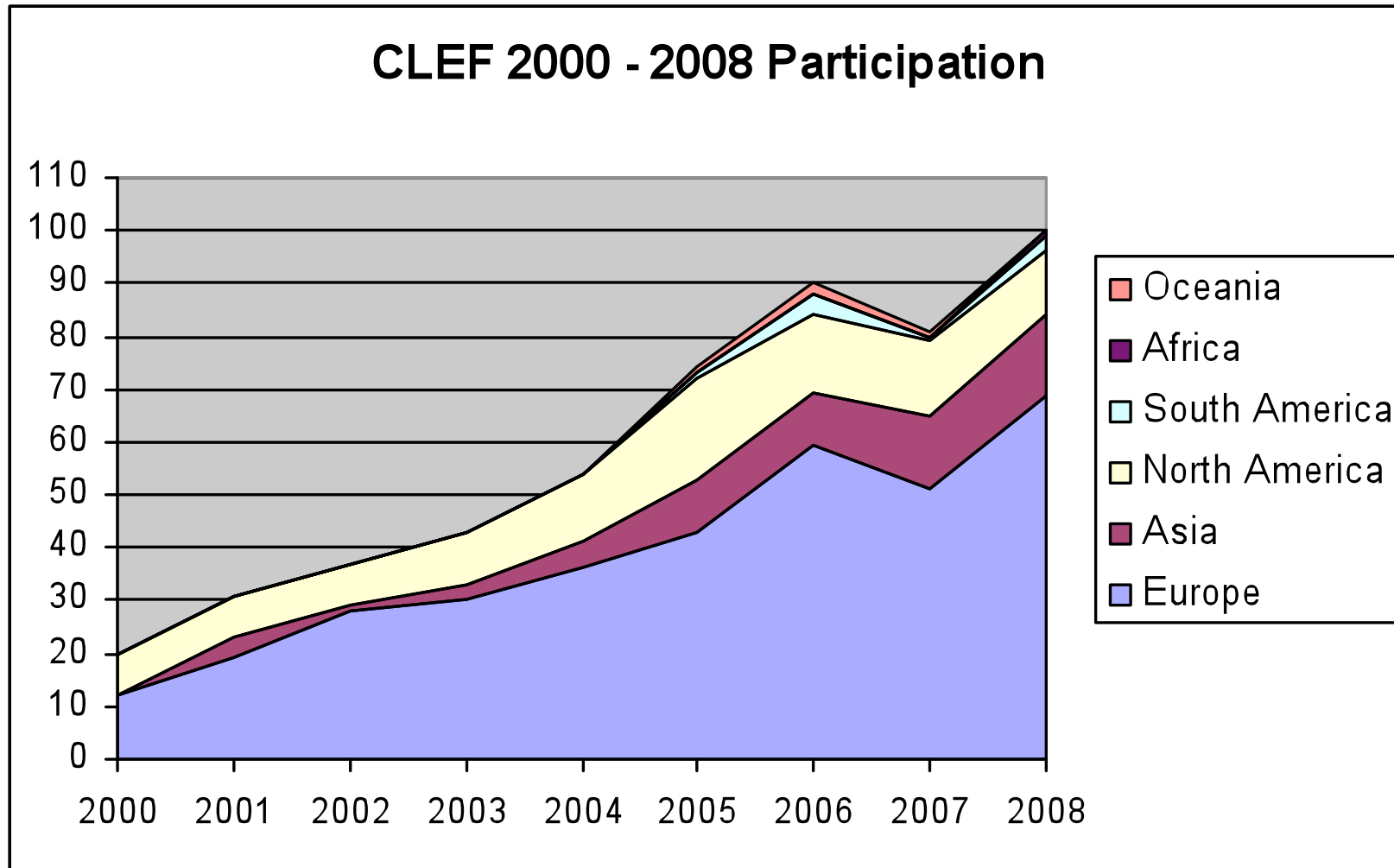
CLEF Tracks: 2000 - 2009



Slide credit: Carol Peters



Cross Language Evaluation Forum



CLEF 2008: Europe = 69; N. America = 12; Asia = 15; S. America = 3; Africa = 1

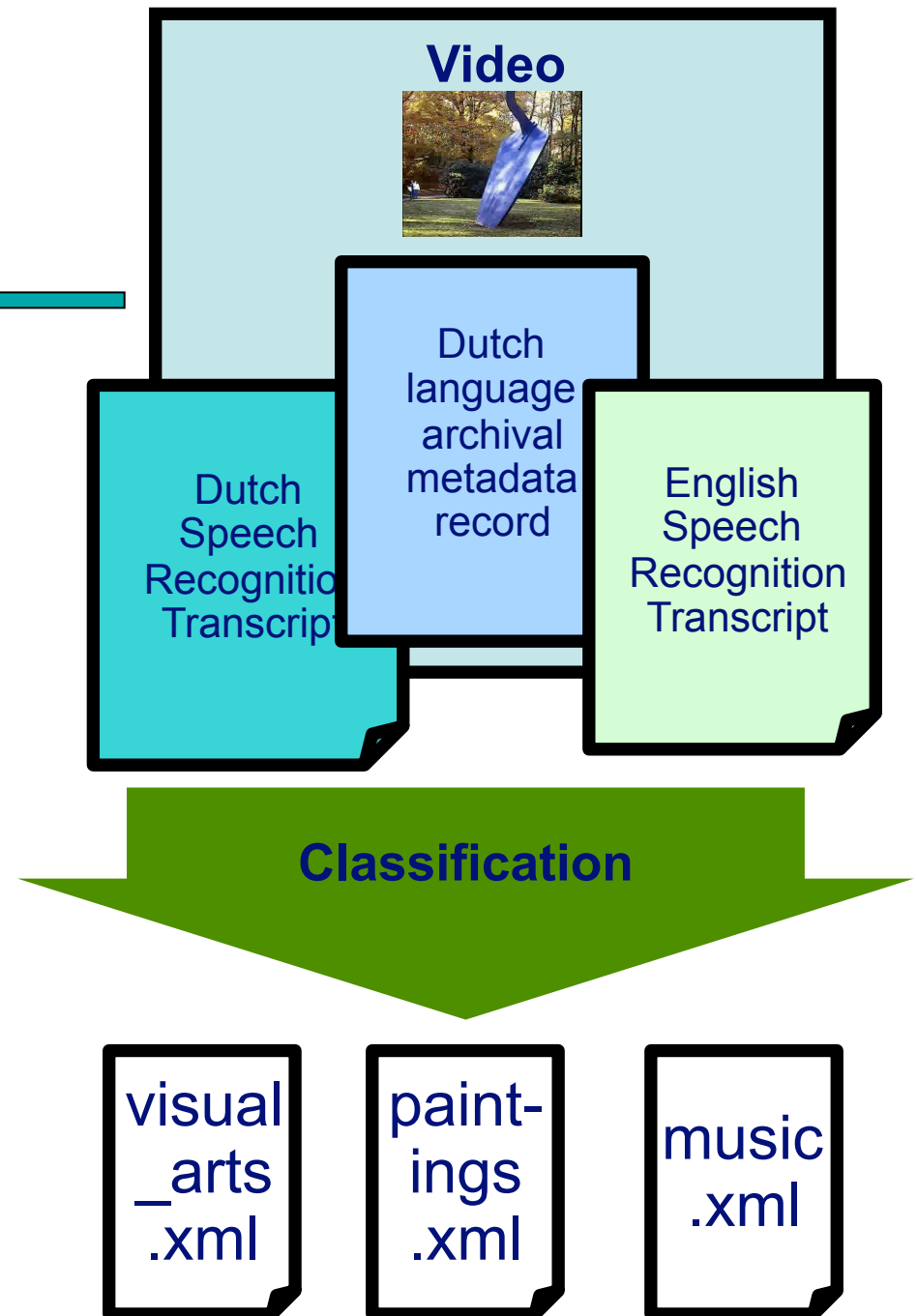
Goals of VideoCLEF

- Provide a platform for research on intelligent access to multilingual video collections
- Develop and evaluate video analysis tasks
- Support research exploiting of automatic speech recognition transcripts and human-generated metadata
- Encourage combination of speech and visual features
- Build on the rich research tradition in video retrieval (TRECVID)

Main Task 2008

- **Input:** Video and speech recognition transcripts
- **Output:** Videos tagged with thematic subject labels:

Archeology, Architecture, Chemistry, Dance, Film, History, Music, Paintings, Scientific research and Visual Arts



Subject theme classes

(3) Art

The Glass Photos
Photo negatives found in the Amsterdam City Archive by 19th Century painter G.H. Breitner

Tormented Genius
This episode explores the topic of tormented genius in particular the link between creativity and...

Deteriorating Art
Research about the cause of deterioration of art and the role of art historians, restoration and...

(4) Music

DENKEN DOORZIEN
Twaalfdelige educatieve serie over ethiek en filosofie. Deze aflevering gaat over de manier waarop...

MUZIEK WERELD WIDJ
Twaalfdelige serie educatieve programma's over muziek waarbij div. elementen van muziek vanuit...

MASTERCLASS JAZZ
Nieuwe vijfdelige serie programma's waarin kinderen tussen de 9 en 14 jaar een uur les krijgen van...

CLOSE-UP
Serie wekelijkse reportages en kunstdocumentaires op het gebied van visuele kunst en cultuur. Serie...

(2) Visual Arts

DENKEN DOORZIEN
Twaalfdelige educatieve serie over ethiek en filosofie. Deze aflevering gaat over de manier waarop...

KUNST IN UITVOERING
Achtdelige serie reportages over Nederlandse beeldend kunstenaars. Deze aflevering is geheel gewijd...

(1) Paintings

DENKEN DOORZIEN
Twaalfdelige educatieve serie over ethiek en filosofie. Deze aflevering gaat over de manier waarop...

- Each video episode (video file) is represented by a keyframe, plus its title and description.
- Videos are grouped by their subject labels (i.e., according to their thematic classes).
- **Subject labels for the task chosen from the subject labels used by multimedia archive staff.**

VideoCLEF 2008 Pilot

Classification Task (Main Task)

- Tag videos with subject labels

Translation Task

- Translate metadata (e.g., into English)

Keyframe Extraction Task

- Select a keyframe as a visual surrogate that provides a semantic representation of each episode

VideoCLEF 2008 data set

- Videos supplied by the Netherlands Institute for Sound and Vision.



BEELD EN GELUID

- Videos are episodes of Dutch language television shows, mostly documentaries and talkshows.
- Videos also contain spoken English (interviewed experts, talkshow guests).

2008 Participants

- Chemnitz University of Technology (CUT)
- Dublin City University (DCU)
- MIRACLE Research Consortium (MIRACLE)
- University of Amsterdam (UAMS)
- University of Jaén (SINAI)

Classification Challenges

- Variation of vocabulary
- Interviewees do not necessarily use topic-specific vocabulary
- Speech recognition errors
- Participants must collect their own training data

(3) Art

The Glass Photos
Photo negatives found in the Amsterdam City Archive by 19th Century painter G.H. Breitner

Tormented Genius
This episode explores the topic of tormented genius in particular the link between creativity and...

Deteriorating Art
Research about the cause of deterioration of art and the role of art historians, restoration and...

(4) Music

DENKEN DOORZIEN
Twaalfdelige educatieve serie over ethiek en filosofie. Deze aflevering gaat over de manier waarop...

MUZIEK WERELD WID
Twaalfdelige serie educatieve programma's over muziek waarbij drie elementen van muziek vanuit...

MASTERCLASS JAZZ
Nieuwe vijfdelige serie programma's waarin kinderen tussen de 9 en 14 jaar een uur les krijgen van...

CLOSE-UP
Serie wekelijkse reportages en kunstdocumentaires op het gebied van visuele kunst en cultuur. Serie...

(2) Visual Arts

DENKEN DOORZIEN
Twaalfdelige educatieve serie over ethiek en filosofie. Deze aflevering gaat over de manier waarop...

KUNST IN UITVOERING
Achtdelige serie reportages over Nederlandse beeldend kunstenaars. Deze aflevering is geheel gewijd...

(1) Paintings

DENKEN DOORZIEN
Twaalfdelige educatieve serie over ethiek en filosofie. Deze aflevering gaat over de manier waarop...

Lessons learned 2008

- **Subject tagging** (classification) task is not trivial
- **Translation** of sufficient quantity to make Dutch-language episode descriptions accessible to non-Dutch speaking English speakers
- **Automatic keyframe selection** competitive with manual keyframe selection

VideoCLEF 2009

- Track is currently ongoing with four tasks
- Main task is still classification: Subject tagging
- Exploratory tasks build on and extend 2008 tasks

1 June 2009: Release of test data

30 June 2009: Run submission deadline

31 July 2009: Release of evaluation results

15 August 2009: Working notes paper due 30

Sept - 2 Oct 2009: CLEF workshop co-located with ECDL 2009 in Corfu





VideoCLEF

Evaluation of Cross-Language Video Access

[VideoCLEF'09](#)[CFP](#)[Related Links](#)[About](#)

VideoCLEF offers cross-language classification, retrieval and analysis tasks on a video collection containing documentaries and talk shows.

The VideoCLEF 2009 Examples and Training data was released on May 13, 2009. If you did not return the [VideoCLEF 2009 User Agreement to Sound and Vision](#) you will not have received the data. If you have sent in the User Agreement, but did not receive the release, please contact Martha Larson m.a.larson@tudelft.nl

This year, the collection will extend the corpus used for the 2008 VideoCLEF pilot track. Task participants are provided with video data along with speech recognition transcripts, archival metadata, shot segmentation and shot-level keyframes. The following tasks are running in 2009:

Subject Classification

Automatic tagging of videos with subject labels such as 'Archeology', 'Dance', 'History', 'Music' and 'Scientific Research'.

Affect and Appeal

Classification subtask: Binary classification of videos as "popular" and "non-popular". Detection subtask: Identification of narrative peaks, i.e., points of dramatic tension.

Information

Beginning of June:

Release of test data

30 June 2009:

Run submission deadline

31 July 2009:

Release of evaluation results

15 August 2009:

Working notes paper due

30 Sept - 2 Oct 2009:

CLEF workshop in Corfu

Registration

Registration for VideoCLEF 2009 is now closed.

Obtaining the data

In addition to registering at the [CLEF website](#) and returning the CLEF 2009 End User Agreement, you need to

VideoCLEF 2009 Tasks

Classification Task (Main Task)

- Tag videos with thematic subject labels
- Label set extended
- Larger data set
- Recycling TRECVID data set for a different task

Cf. “Google Challenge: Robust, As-Accurate-As-Human Genre Classification for Video” at ACM Multimedia 2009

MULTIMEDIA GRAND CHALLENGE 2009

All you need to know about the Multimedia Grand Challenge for ACM Multimedia 2009

Home About The MM Grand Challenge



Google Challenge: Robust, As-Accurate-As-Human Genre Classification for Video

Feb 2nd, 2009 by Jay Yagnik.

A notion of browsing collections is naturally associated with videos.

Having a hierarchy of genres is one goal of this task would be their sparse and noisy metadata to genres. A public genre hierarchy can be used as a target for this task. Evaluating content features as well as a combination of features that bring in information from other public datasets can also be used (eg. Object detectors trained on a separate public dataset). Thinking of new (and surprising) features is recommended!

Any dataset that reflects a breath of content is acceptable, and of course, YouTube and Google Video are a recommended source.

Particularly, the data should cover most of the common video genres.

“A public genre hierarchy like ODP (Open Directory Project) can be used as a target for this task.”

“Thinking of new (and surprising) features is recommended!”

- Google
- HP
- Nokia
- Radvision
- Yahoo!

KEY DATES

- Jun 15, 2009: Submission deadline
- Oct 19, 2009: Conference start

- RECENT POSTS**
- ⇒ [Submission, Prize, Sponsors all coming soon!](#)
 - ⇒ [Posted: Dataset for Nokia Photo Location Challenge](#)
 - ⇒ [Full Paper Deadline](#)

EXTERNAL LINKS

- [ACM MM2009](#)

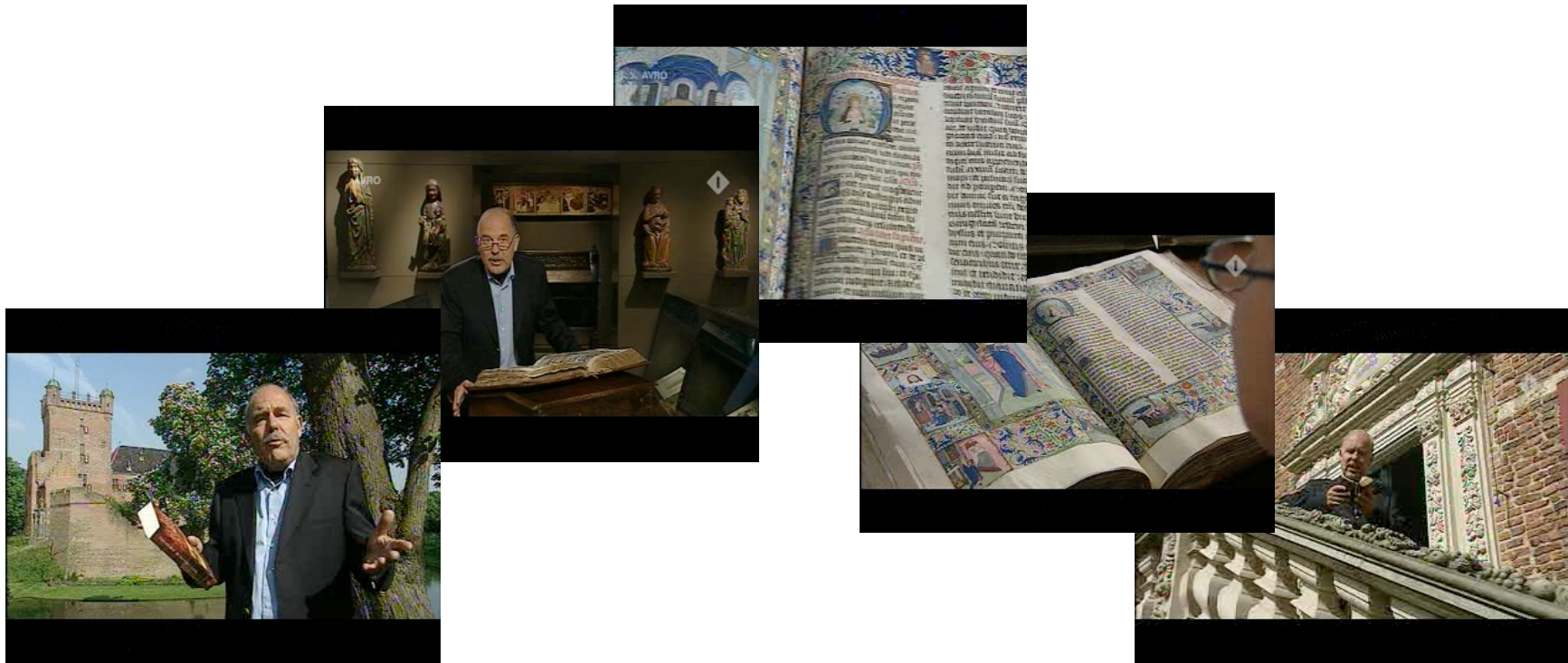
META

- [Log in](#)

Exploratory task 2009 (1/3)

Semantic keyframe selection

- Select a keyframe **set** to provide a semantic representation of thematic content of the entire video



Exploratory task 2009 (2/3)

Appeal Task

- **Popularity classification:** Classify videos as “popular” or “not-popular”

Affect Task

- **Narrative peak detection:** Identify points of particular dramatic tension

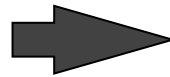
*Describing the death
of Marc Rothko*



Exploratory task 2009 (3/3)

Finding Related Resources

- Identify information from non-Dutch sources that will support comprehension of Dutch-language videos



The image displays three overlapping screenshots of Wikipedia pages. The top-left screenshot shows the 'Canals of Amsterdam' article, the bottom-left shows the 'Amsterdam' article, and the right side shows the 'Museum Willet-Holthuysen' article. A large black arrow points from the museum photograph on the left towards these screenshots.

VideoCLEF 2010 and beyond

Continue to promote multimodality

- The continuing quest to integrate speech, audio, and visual information into video retrieval.

Expand to use a social video collection

- Internet video = variability of production values
- User contributed information such as tags and ratings are an important information source.
- Also, relationships between users in a social network can be exploited for recommendation and retrieval.

Summary & Outlook

- VideoCLEF promotes research on intelligent video access in a multilingual setting.
- We “keep up the pressure” on long-standing unsolved tasks: i.e., Subject tagging.
- We also support forward-looking research:
 - Breaking down language barriers in multimedia access
 - Creating meaningful visual surrogates
 - Analyzing affective content
 - Classifying video on the basis of inherent viewer appeal
 - Linking video to other resources
 - Video in social collections

<http://www.cdvp.dcu.ie/VideoCLEF>



Acknowledgements

- University of Twente for supplying the speech recognition transcripts
- Netherlands Institute of Sound and Vision for supplying the video
- TrebleCLEF for annotation support
- Colleagues at DCU for supplying shot segmentation
- Colleagues at TU-Delft and in PetaMedia



BEELD EN GELUID

