

Content Based Access to Digital Libraries ... in particular video!

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What is a Digital Library?

DELOS defines it as: "An organization, which might be virtual, that comprehensively collects, manages and preserves for the long term rich digital content, and offers to its user communities specialized functionality on that content, of measurable quality and according to codified policies";

So is the web a DL? Is Flickr or YouTube a DL?

The difference is not to do with user-generated content, but that a DL is to some degree curated, monitored, overseen, and not self-regulated;

But ... the techniques we develop for UGC will transfer, so they are worth looking at;

Digital Libraries



DLs should be capable of storing all kinds of digital information, and supporting effective user interaction

Ease of use and speed of response are a given

We're used to fast, clever support for text-based web searching, though we tolerate search failure and assume the blame;

In more traditional libraries we're used to asking for help when we're stuck, and this isn't replicated in DLs;





While we tolerate bad text search support, we're unbelievably forgiving of poor search support for other media ...

... so much so that we do all the work ourselves.

How? We tag things, manually, which gives user generated content, and user generated indexing;

Why? Because it's the only way ... for now;

Today I will show you what will be possible, is possible now, but not on the scale we want;





User tagging <u>was</u> seen as a drag, encumbrance, prone to synonymy errors, interpretations



The Earth is God's Canvas. by Catch the dream

288 comments $\frac{1}{2}$ 549 faves $\frac{1}{2}$ 13 notes

Tagged with winter, people, color, childhood ...
Taken on December 31, 2006, uploaded
January 1, 2008

Taken in Narayanganj, Dhaka (map)

See more of Catch the dream's photos, or visit his profile.



Lil' Sad Clown by Aihibed

124 comments 239 faves 339 faves 3 notes

Tagged with photography, child, sad, clown ... Taken on September 19, 2007, uploaded September 19, 2007

Taken in La Paz, Baja California Sur (map)





Mileage from tags ...

... but it has proven to be hugely interesting ...

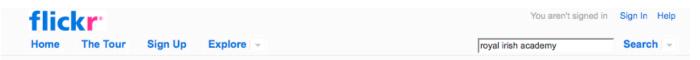
All time most popular tags

africa animals architecture art asia australia autumn baby band barcelona beach berlin bird birthday black blackandwhite blue boston bw california cameraphone camping canada canon car cat chicago china christmas church city clouds color concert cute dance day de dog england europe fall family festival film florida flower flowers food football france friends fun garden geotagged germany girl girls graffiti green halloween hawaii hiking holiday home house india ireland island italia italy japan july kids la lake landscape light live london macro me mexico mountain mountains museum music nature new newyork newyorkcity night nikon nyc ocean old paris park party people photo photography photos portrait red river rock rome san sanfrancisco scotland sea seattle show sky snow spain spring street summer sun sunset taiwan texas thailand tokyo toronto tour travel tree trees trip uk urban usa vacation vancouver washington water wedding white winter vellow york zoo

Mileage ..

Inadvertently, and unintentionally, it also supports tag and media browsing;

2 clicks later ...



We found 63 photos matching <u>royal irish</u> academy. Click "search" above to see!

Uploaded on November 18, 2008

- milezero's photostream

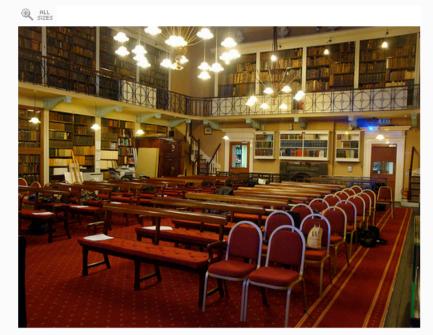
Additional Information

(a) All rights reserved
(b) Anyone can see this photo
(c) Taken with a Sony DSC-W170.
(c) More properties
(c) Taken on November 14, 2008

O Viewed 5 times

by milezero

Royal Irish Academy



Between sessions

Comments



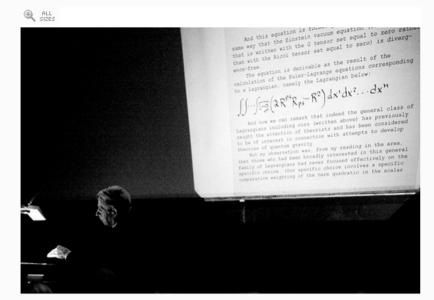


cbonney pro says:

The wise scholars get there in time to get the seats with the comfortable backs. Posted 3 months ago. (permalink)

< Prev 1 2 Next > (63 comments)

John Nash in TCD (Trinity College Dublin)



John Nash gives the annual Hamilton Lecture for the Royal Irish Academy in Trinity College Dublin.

Comments



Randombassist pro says:

still my favourite of all yours!
Posted 23 months ago. (permalink)



Randombassist pro says:

Hi, I'm an admin for a group called <u>UCD Photosoc</u>, and we'd love to have your photo added to the group.

Because you rock, see.

Posted 16 months ago. (permalink)



Danthehayden says:

incredible shot Dan.
Posted 15 months ago. (permalink)



Dan Akers says:

From the Rate and Comment:Black and White Group, you are given a 6/10 ranking.



clarity-centre.org

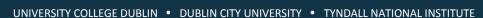
This photo also belongs to:

+ UCD Photosoc (Pool)



Tags

- john
- nash
- lecture
- light
- slide
- theatre
- ucd
- ge dod
- students
 ireland
- irish
- projector
- silhouette
- best
- contrast
- equation
- economics
- mathematics





Mileage from tags ...

... and even an opportunity to study sociology, world events, trends, sentiment ...

Hot tags

In the last 24 hours

project36534, snowylondon, pernondimenticare, hggt, hpps, hnff, perfectpurplesaturdays, niftyfiftyfriday, simplesunday, nouvelan, hff, fridaydesignface, threesixtyfive, bluemonday, w12, adad, dennys, birthdayweek, reims, pfoisland07a

Over the last week

uksnow, superbowlsunday, idiotarod, wintercity, jan28, feb1, jan31, jan30, popobamaweekcontest, jan22, pileau, byebyebush, cfdt, gp0109, veet, snowlondon, roflthing, ohayocon, londonsnow, groundhogday

More tag mileage

One of the most useful tags is geo-location ... becoming easier, 5% to 8% Flickr photos are geo-tagged ...

... includes placenames and long/lat ...

... and even this can be used to define placenames!



Dublin, O'Connell Bridge by kris H

93 comments \$\frac{1}{2}\$ faves

Tagged with bridge, ireland, dublin, reflection ... Taken on December 12, 2007, uploaded February 1, 2008

Taken in Ringsend, Dublin, DUB, Ireland (map)

See more of kris H's photos, or visit his profile.



Liffey River sunset, Dublin Ireland by reddirt791

21 comments 9 faves

Tagged with ireland, dublin, irish, river ... Taken in May 1980, uploaded March 12, 2008 Taken in Dublin, Dublin (map)

See more of reddirt791's photos, or visit his profile.



O'Connell Street Bridge, Dublin, Ireland

by Seven Seconds Before...

13 comments 22 faves

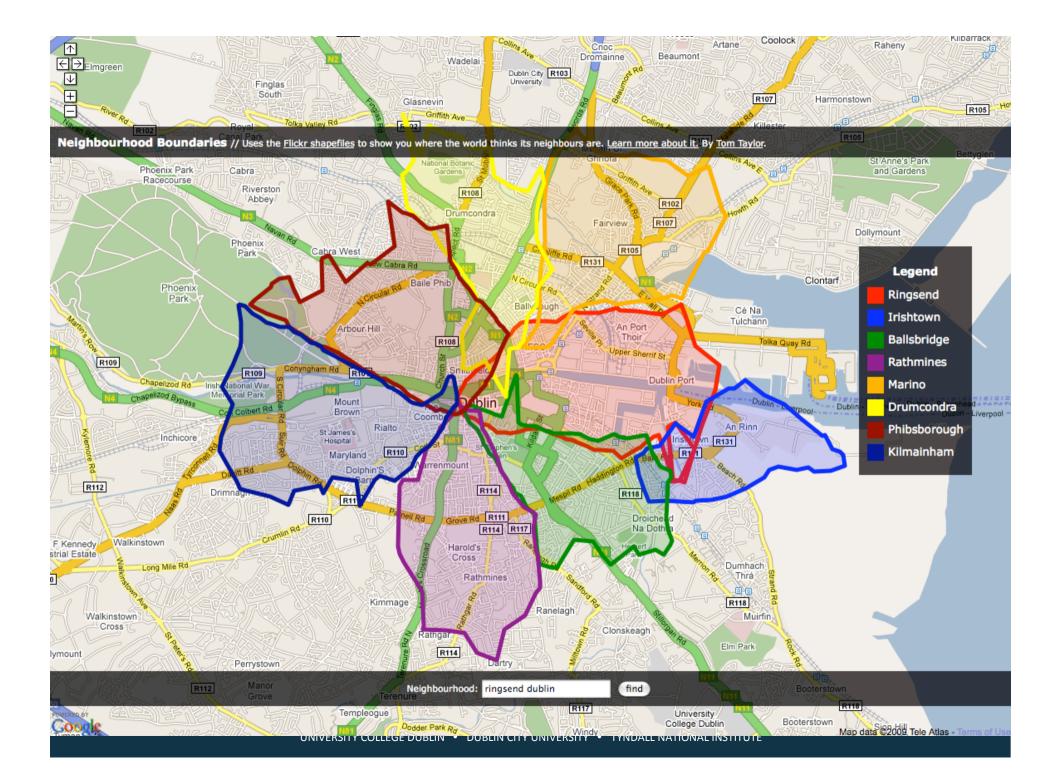
Tagged with city, travel, bridge, ireland ... Taken on November 21, 2004, uploaded September 24, 2006

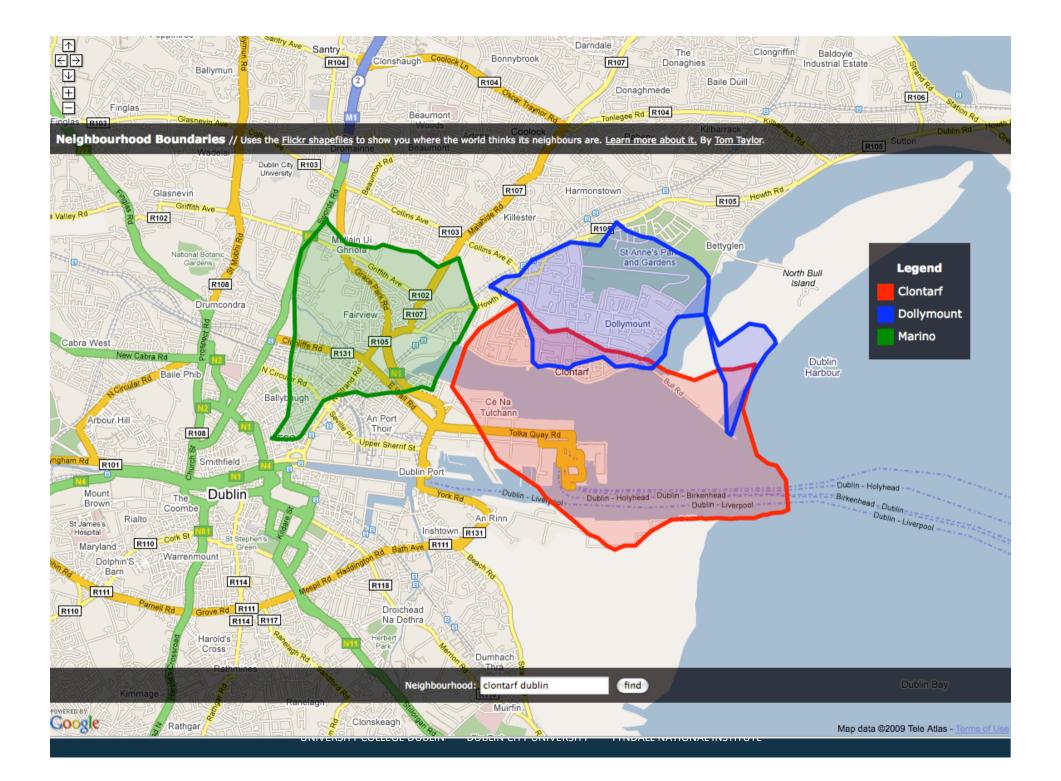
Taken in Ringsend, Dublin, DUB, Ireland (map)



See more of Seven Seconds Before

Sunrise's photos, or visit her profile.









So tags can be used for more than they were intended;

Another bonus of UGC!

Correct interpretation of tags and co-tagging for support of user searching, is a challenge for the *semantic web* and they are working on ontologies and terminology normalisation

But ... back to DL searching ...

We focus on video medium ... and the biggest video DL is YouTube, but it isn't the only one;

Before we look at them, lets have some video basics;





Video is a collation of images presented so fast they give the illusion of motion;

A "programme" is divided into logical scenes, and a scene is composed of 1 or more camera shots;

A shot is a single motion of a camera in time and can involve camera motion like panning, zooming, tracking or booming;

Objects in a camera shot can also move;

Shots can transition using fade in/out, fade to black, wipes, or the more usual hard cut;

There's an awful lot of video 10,000 TB = 1M hours of original TV and radio content in 2002 alone;





Many of the issues associated with video in digital form are solved!

Capture, formatting, compression, storage, transmission, rendering on fixed and mobile

Digital video is widespread and outstanding challenge(s) are managing video content;

Key catalyst in this has been compression format standards;

There are several (!) AVI, QuickTime, WMV, etc. but the ones that matter are MPEG;





Managing means many things
Analysis, indexing, summarising, browsing and searching;

Automatic structuring of video is necessary to make progress in managing, a.k.a. shot bound detection;

A shot in video information is a sequence of continuous images

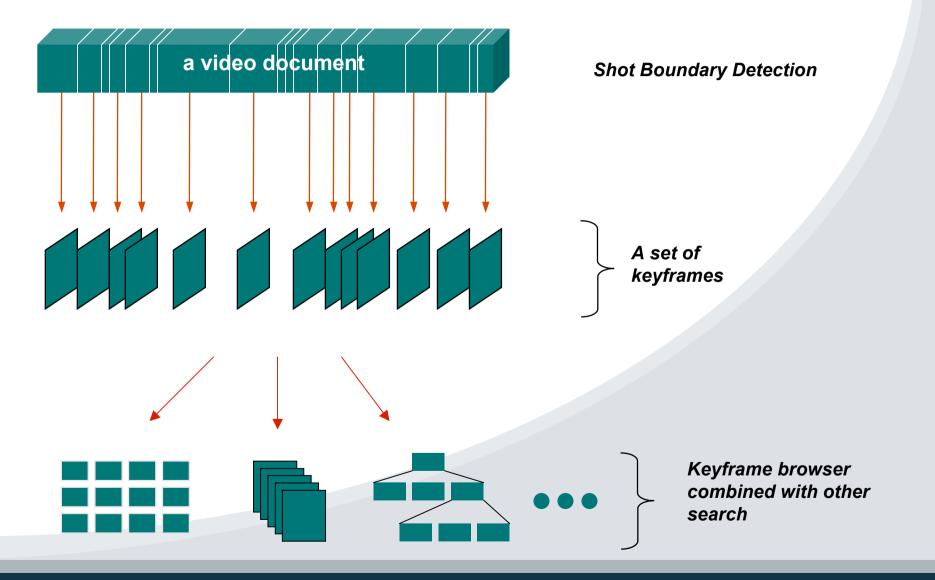
(frames) from a single camera.
A shot boundary is crossed when a new camera is used, or a recording instance ends and a new one begins.

The task of SBD or automatic video segmentation is to segment video into its constituent shots...

To allow content-based operations over video at granularity of shot units by examining every X frames / adjacent frames to look for shot cuts.

Automatic structuring of video







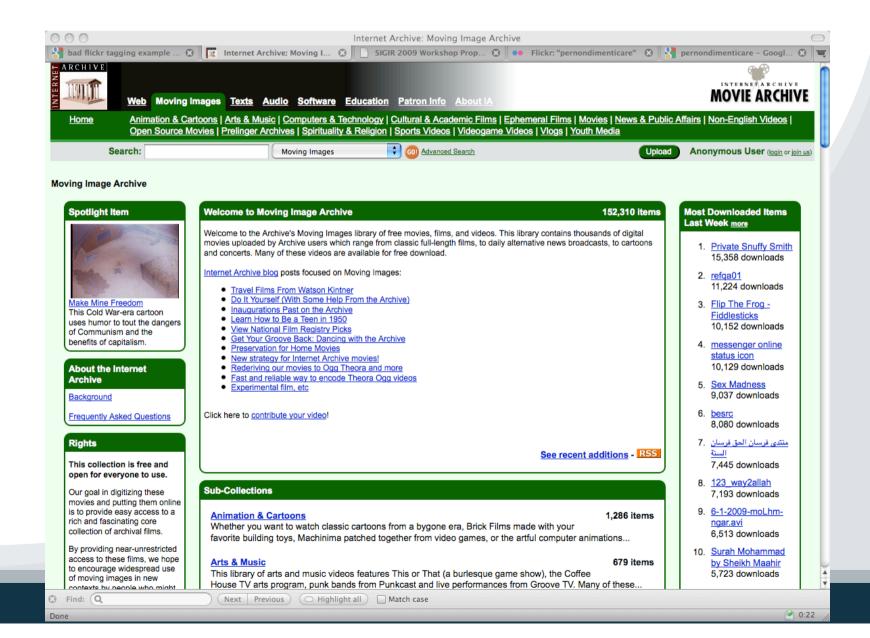


Metadata includes title, date, actor(s), producer(s), genre, running time, video format, reviews, ratings, ©, etc. ... and user tags ...

... most coupled with keyframe / storyboard previews

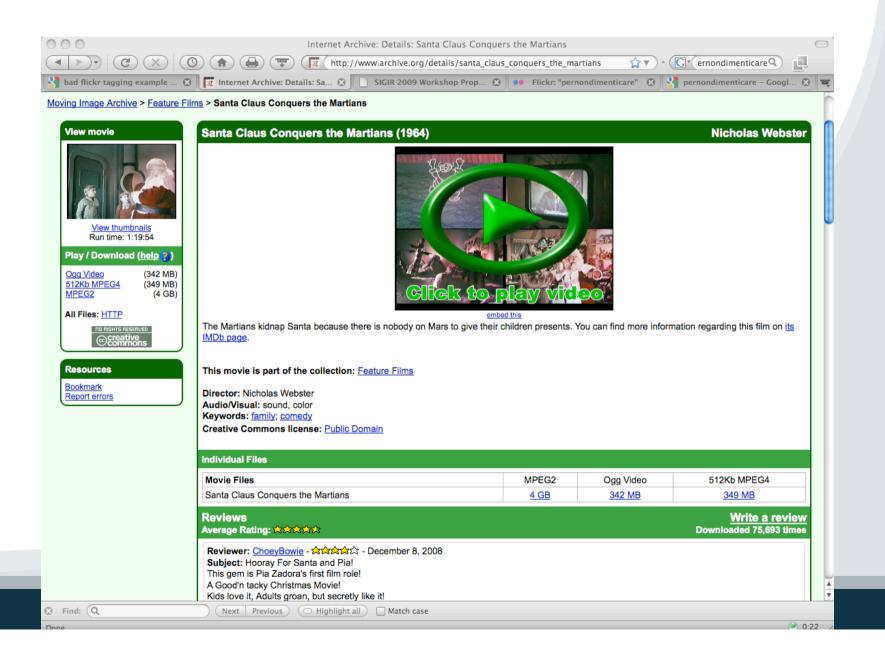
Internet Movie Archive





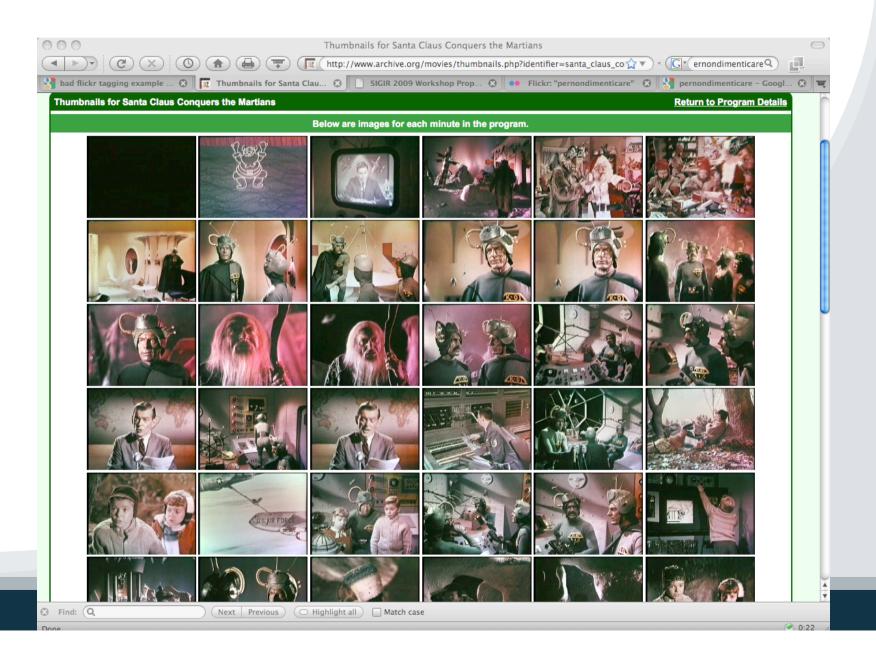
Internet Movie Archive





Internet Movie Archive















Name of the last o







Home Contribute About

Search

Search

ex. "water" or "space shuttle"

Detailed Search

Browse

Genre

- · Documentary [494]
- Educational [1072]
- Ephemeral [1139]
- Historical [187]
- Lecture [33]
- Other [5]
- Public Service [17]

Color

- In color [1908]
- In black & white [1039]

Duration

- . Less than 1 minute [259]
- 1 to 2 minutes [330]
- 2 to 5 minutes [669]
- 5 to 10 minutes [577]
- More than 10 minutes [1092]

Sound

- With sound [2550]
- Silent [397]

Collections

- · University of Maryland HCIL Open House Video Reports
- · The Informedia Project at Carnegie Mellon University
- · Internet Moving Images Archive
- 2001 TREC Video Retrieval Test Collection
- CHI Video Retrospective
- Digital Himalaya Project
- NASA K-16 Science Education Programs

Special Collection Spotlight



NASA K-16 Science Education Programs

NASA's Center for Distance Learning, at NASA Langley Research Center in Hampton, Virginia broadcasts five programs aimed at K-16 students, teachers, and parents.

This collection contains 580 videos.

other special collections...

Project News

- · Teachers using video?
- · CHI videos added
- · Redesigned Project Web Site
- · Understanding Video Symposium more...

Featured Video

New



TIME: Three-dimensional Input, Modification and Evaluation

Other new videos

- ACM CHI 1984 Issue 12 -Selection-positioning Task Study
- ACM CHI 1985 Issue 18 -Designing a 'No Surprise Editor' prototype
- . Tribute To World War II NISEI Veterans - Inouve

more...

Popular

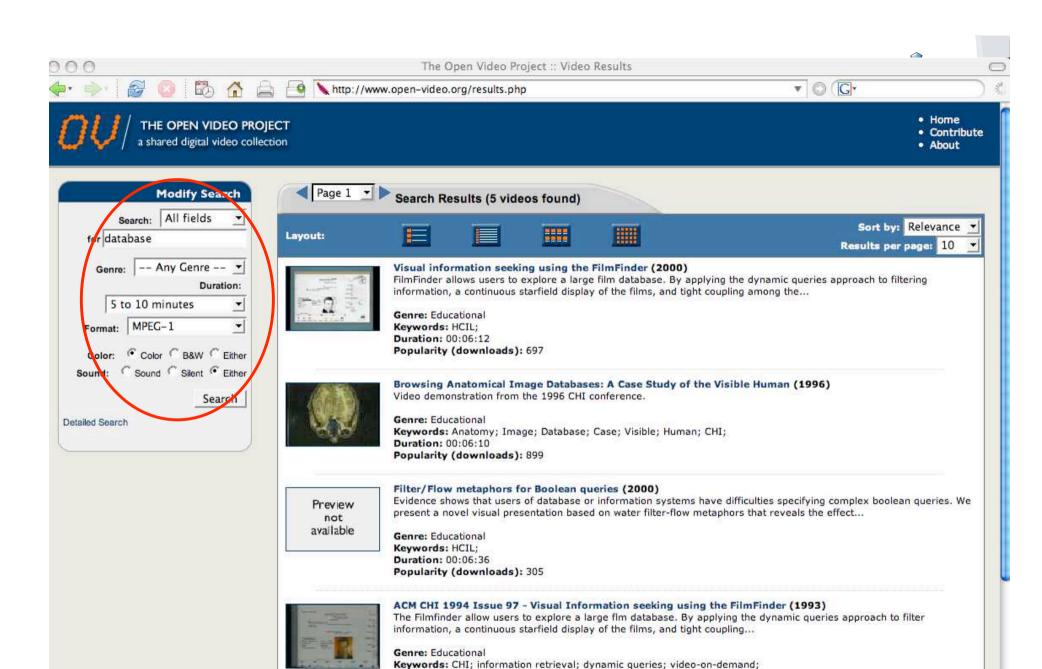


Atom Bomb - Joe Bonica's Movie of the Month

Other popular videos

- · Classic Television Commercials (Part II)
- · NASA 25th Anniversary Show, Segment 01
- Bunjee

more...



Duration: 00:06:22 Popularity (downloads): 67

Snap together visualization (2000)

Information visualizations with multiple coordinated views enable users to rapidly explore complex data and discover











http://www.open-video.org/details.php?videoid=708&surrogate=storyboard







Home Contribute About

Search

ex. "water" or "space shuttle" Search

Detailed Search

Related Video

Video Grab Bag



ACM CHI 1989 Issue 46 - Sun 386i on line help

Other random videos

- · Easier Way, The
- · Fluid Links for Informed and Incremental Hypertext Browsing
- · New Indians, Segment 101

more...

Related keyword searches

HCIL

Video Details

Visual information seeking using the FilmFinder





FilmFinder allows users to explore a large film database. By applying the dynamic queries approach to filtering information, a continuous starfield display of the films, and tight coupling among the components of the display, the FilmFinder environment encourages incremental and exploratory search.







































Download:

MPEG-1 • 61.00 MB

Video Information

Year: 2000 Genre: Educational HCIL; Keywords: Duration: 00:06:12 Color: Yes Sound: Yes

Done





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edit

-> **≥** ×

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+ Add / Remove Modules



You haven't added any subscriptions yet.

Click the "Subscribe" button on any video watch page or channel page, and when your favorite channels upload new videos, they'll show up here.





We Hate: Twitter

Stuart Miles gets riled about the incessant twittering that goes on all day.

**** 1 week ago 21,053 views MegaWhatTV



Turning A Gas Mask Into A Nightmare Kazoo

I have acquired some old Soviet gas masks, sent over from Berlin. They are absolut...

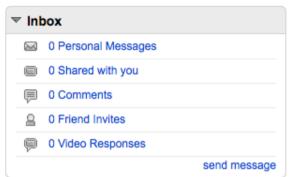
★★★★★ 1 week ago 44,514 views rathergoodstuff



Miscalculation

Man: Andrew Bartley Created by Michael Cullen











Watch YouTube on your TV

Delete Your Own Video Comments

We're happy to announce the launch of a feature many of you have been asking for: you now have the ability to delete comments you've made on videos.

Read more in our Blog





Comptine d'une autre midi - Yann... 1 year ago

FOOTBALL FIGHTS - FOULS - KICKS ... 10 months ago

Google Hacks And Tricks Video

1 year ago 1 year ago

Inter Vs Palermo -

Adriano Trave...



Apple Music Special Event

3 years ago 401,147 views peestandingup





Computer And Office Rage

1 year ago 31,944 views cdcollura





Optical Camouflage

2 years ago 161,297 views Solide18





Pes 2008 funny bug

edit 🙈 🟏 🗶

 \wedge

1 year ago 1,016,329 views SoulPunish3r



Friend Activity

You haven't added any friends yet.

Once you have connected with friends, this page will show you their latest uploaded videos, favorites, and video ratings.

(Can others see what I do?)

Promoted Videos



MUTO a wall-painted

9 months ago 3.738.591 views notblu





Paiamachievemen ts: Burnout Live

5 hours ago 4,921 views roosterteeth



Warner Bros. Responds To

4 hours ago 3,954 views comedycomedy



Snow Chemistry -Periodic Table ...

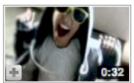
1 day ago 64,075 views periodicvideos

Rising Videos (view all)



MAC's Hello Kitty Event

17 hours ago 23,442 views



Supermac18 - My Life Would Suck

6 days ago 136.329 views



Paramore- Decode Music Video

2 weeks ago 553,395 views



edit 🙈 😪

Why I Love Monty Python

2 weeks ago 284,230 views









Similar leveraging of user tags beyond search, including recommendations, friends, popularity, ratings, rising videos, channels ...

... but nothing on actual content, i.e. the video frame itself, the visuals, the things in the frame, the camera or object motion, the audio



Rising Videos (view all)













- Use text from speech ASR/CC/in-video OCR
- Match keyframes vs. query images
- Use semantic video features
- Use video/image objects as queries





Spoken dialogue can be of assistance in video navigation, and it may not be, it depends;

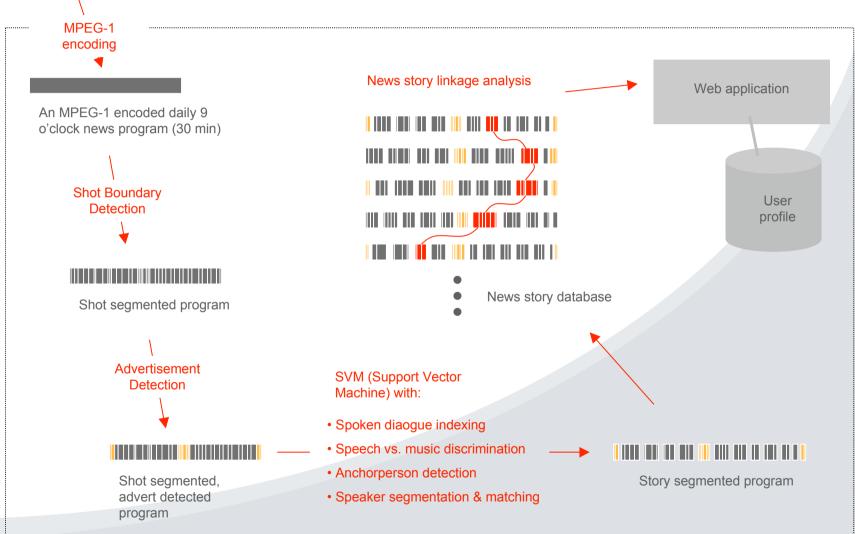
Spoken dialogue can come from automatic speech recognition (ASR), or closed captions, or video OCR;

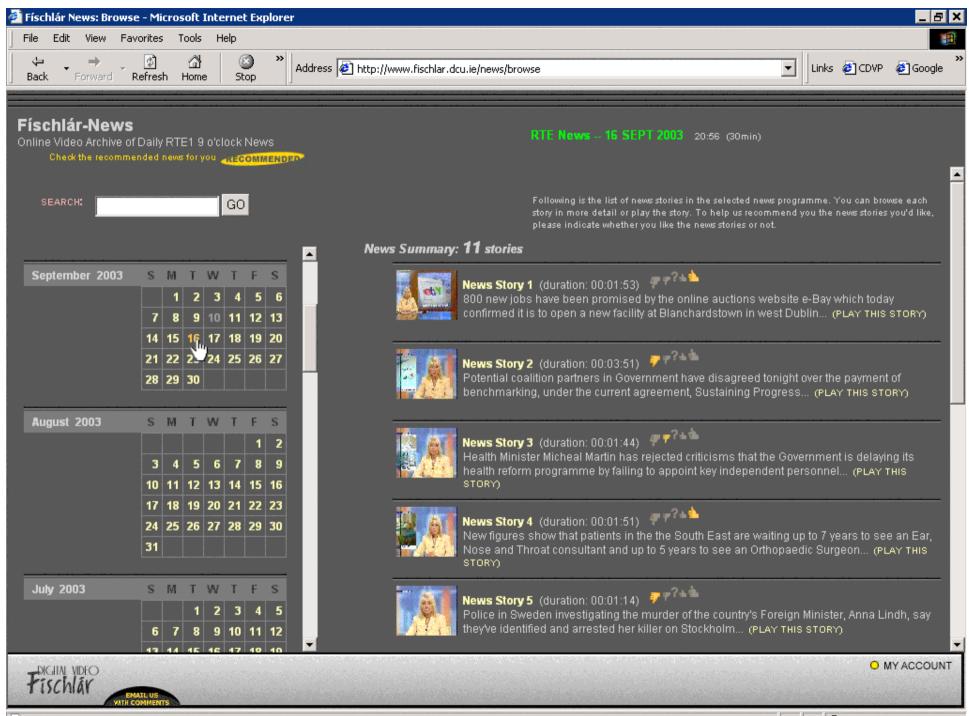
For certain genres of video, this can be sufficient

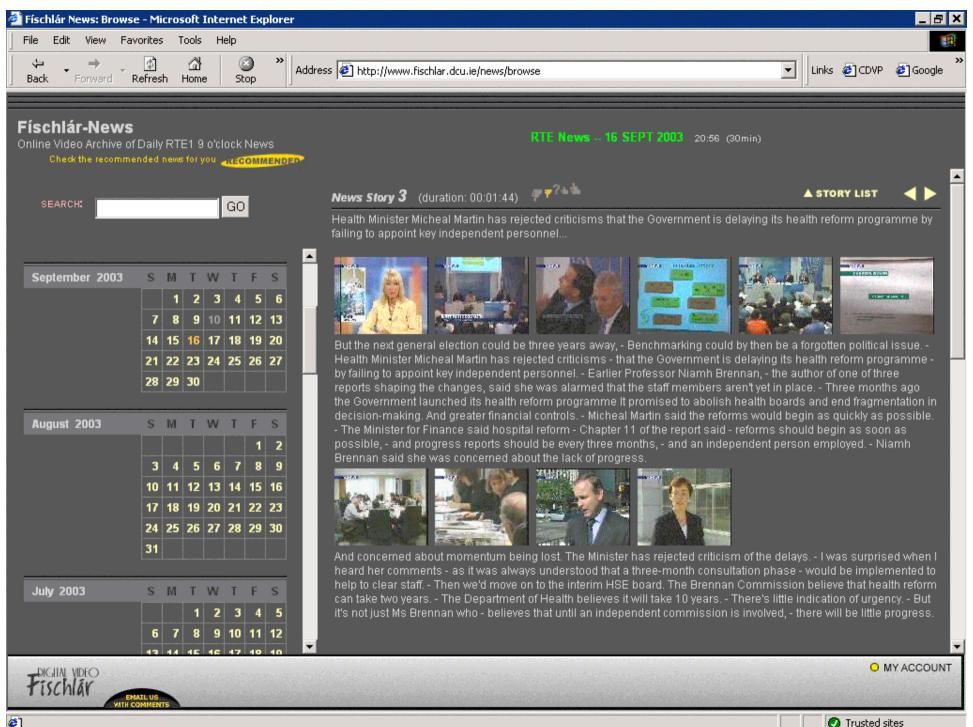
Físchlar-News is a good example

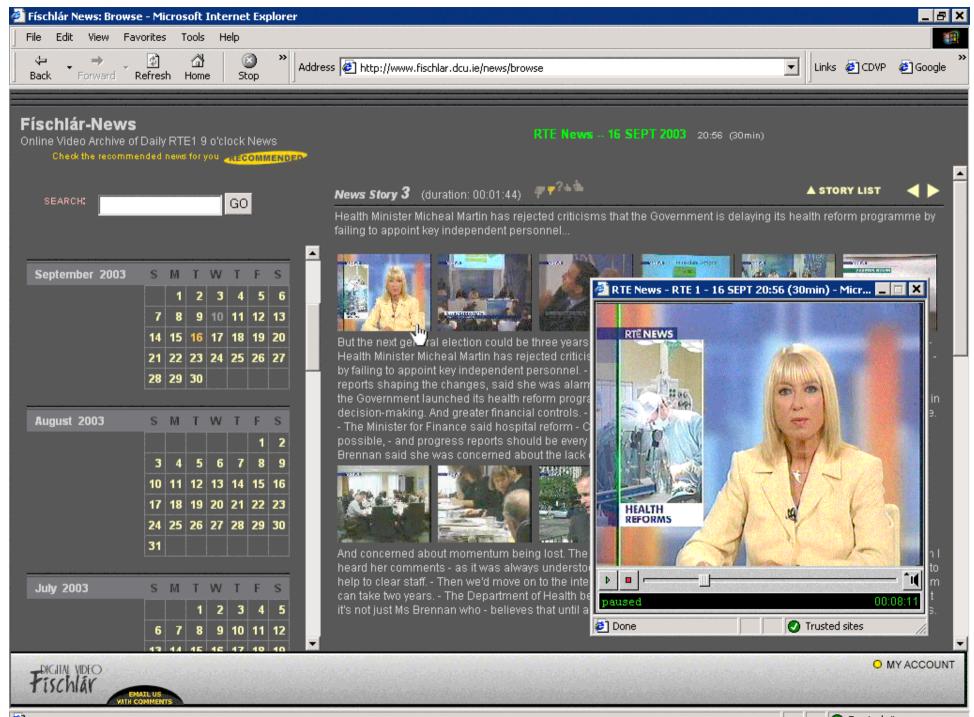


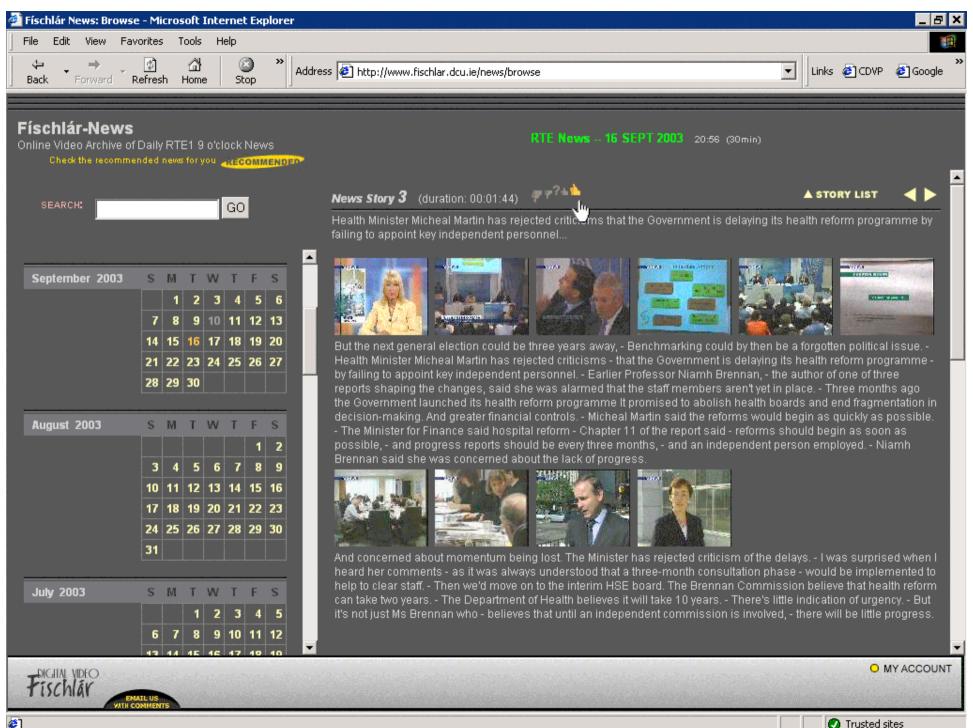




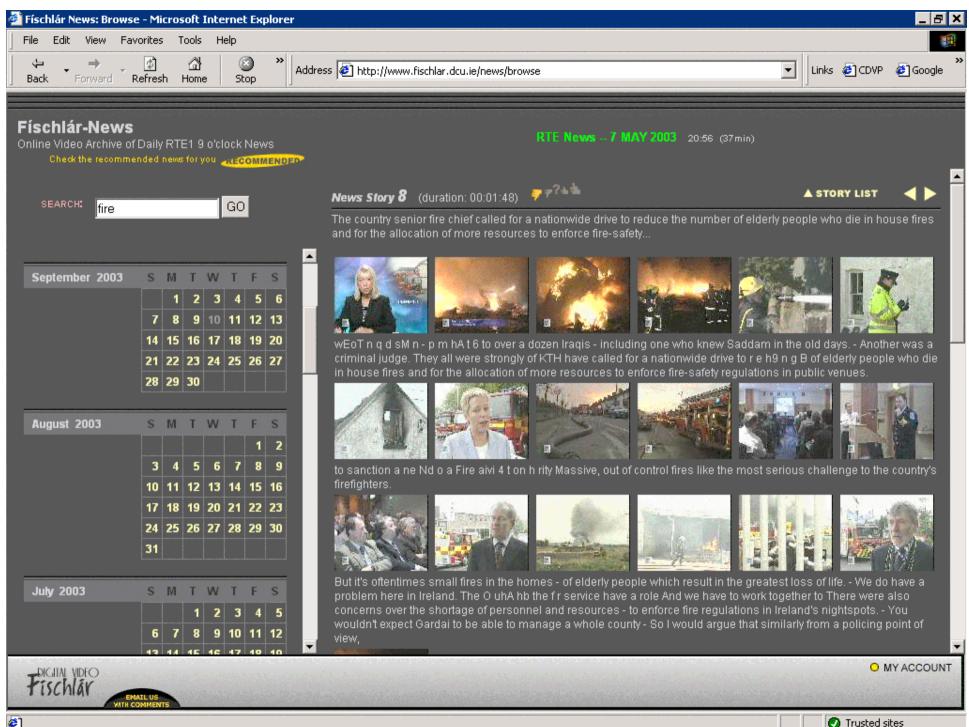


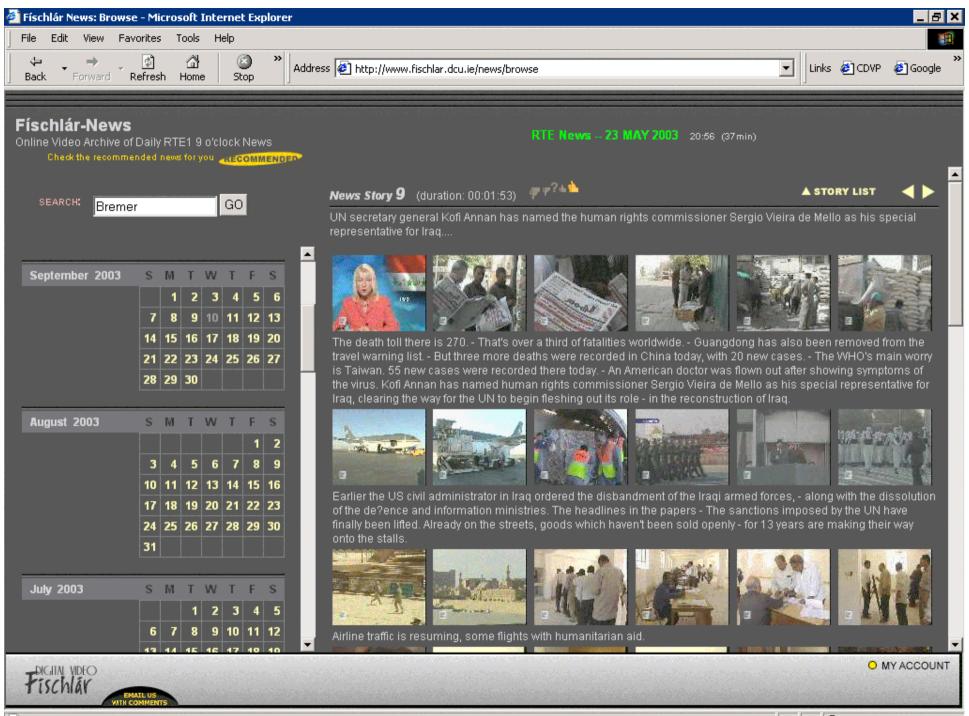
















ASR based video retrieval is not visual;

Keyframes extracted as shot representatives can be used for retrieval;

Requires user to locate images/other keyframes, from browsing, or other search;

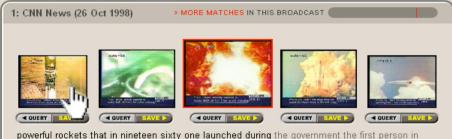
Video navigation by matching keyframes is: Sufficient if the query is very visually distinctive

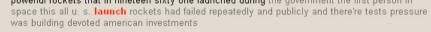
Físchlár-TRECVid2004 is a good example;



Search found 169 matching shots. Following is the ranked list of the search result. Click an image to play the segment, click that button to add to your answers, or click that button to improve subsequent guery.

RESULT PAGE: 1 2 3 4 5

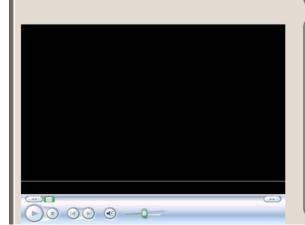






but it was far gentler than lives at least one we've that the astronauts back in space again that

was quite different than a ride i got before of course back a long time ago





half a dozen astronauts would then take six months to rocket the thirty four million miles to mars they'd spend the next year and a half exploring and conducting experiments that had all mission

time two and a half years mas is really going to be the place where humans will

TASK 1
SEE DESCRIPTION

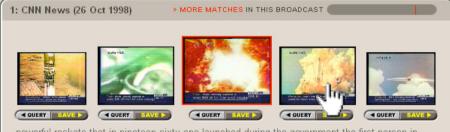
→ FINISH THIS TASK

■ SAVED SHOTS



Search found 169 matching shots. Following is the ranked list of the search result. Click an image to play the segment, click button to add to your answers, or click duent button to improve subsequent query.

RESULT PAGE: 1 2 3 4 5



powerful rockets that in nineteen sixty one launched during the government the first person in space this all u. s. **launch** rockets had failed repeatedly and publicly and there're tests pressure was building devoted american investments



that manages about we've got big he'd be in on board discovery yesterday to launch would have looked like this when is in the middle of this picture are shuttle launch can be built in wrestling but it was far gentler than lives at least one we've that the astronauts back in space again that was quite different than a ride i got before of course back a long time ago





on wasn't whether one shot mission will been a permanent presence on mars because a mars vehicle would be too heavy to <code>launch</code> from earth it'd be assembled piece by piece in earth orbit half a dozen astronauts would then take six months to <code>rocket</code> the thirty four million miles to mars they'd spend the next year and a half exploring and conducting experiments that had all mission time two and a half years mas is really going to be the place where humans will



TASK 1

→ FINISH THIS TASK

■ SAVED SHOTS



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RESULT PAGE: 1 2 3 4 5





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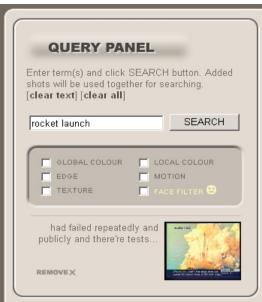
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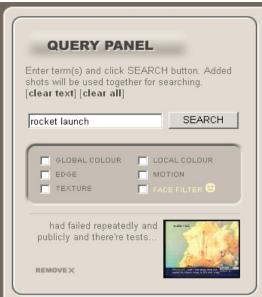




TASK 1

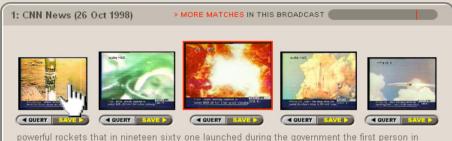
→ FINISH THIS TASK

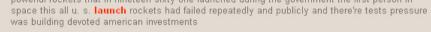
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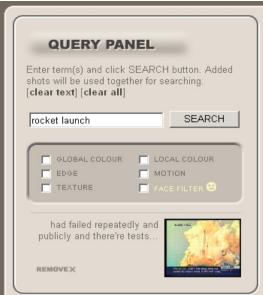


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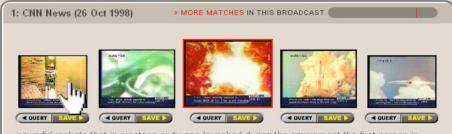
→ FINISH THIS TASK

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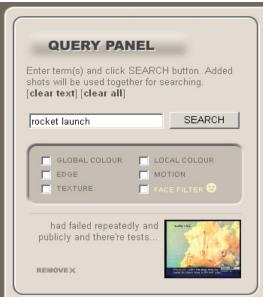


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RESULT PAGE: 1 2 3 4 5





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TASK 1

→ FINISH THIS TASK

■ SAVED SHOTS



rocket launch

SEARCH

GLOBAL COLOUR LOCAL COLOUR F EDGE

MOTION

TEXTURE

had failed repeatedly and publicly and there're tests..



REMOVEX

powerful rockets that in nineteen sixty one launched during.

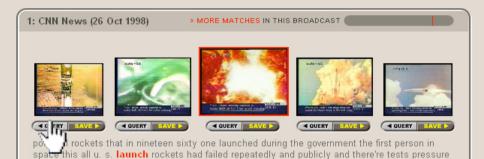
REMOVEX



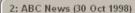
SEARCH RESULT

Search found 169 matching shots. Following is the ranked list of the search result. Click an image to play the segment, click button to add to your answers, or click QUERY button to improve subsequent query.

RESULT PAGE: 1 2 3 4 5







> MORE MATCHES IN THIS BROADCAST











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3: ABC News (26 Oct 1998)





> MORE MATCHES IN THIS BROADCAST





■ QUERY

■ QUERY

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rocket launch

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GLOBAL COLOUR LOCAL COLOUR F EDGE

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REMOVEX



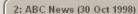
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> MORE MATCHES IN THIS BROADCAST 3: ABC News (26 Oct 1998)







■ QUERY

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rocket launch

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GLOBAL COLOUR | LOCAL COLOUR

MOTION

F EDGE TEXTURE

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REMOVEX

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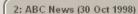
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■ QUERY







■ QUERY

■ QUERY

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rocket launch

SEARCH

GLOBAL COLOUR | LOCAL COLOUR

MOTION

F EDGE TEXTURE

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REMOVEX

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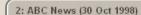
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3: ABC News (26 Oct 1998)

> MORE MATCHES IN THIS BROADCAST



■ QUERY

■ QUERY ■ QUERY





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rocket launch

SEARCH

GLOBAL COLOUR | LOCAL COLOUR

MOTION

F EDGE TEXTURE

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REMOVEX

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(►) (B) (B) (C) (—1)

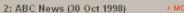
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> MORE MATCHES IN THIS BROADCAST











■ QUERY

■ QUERY

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rocket launch

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GLOBAL COLOUR LOCAL COLOUR Th EDGE

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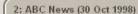
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> MORE MATCHES IN THIS BROADCAST











■ QUERY ∢ QUERY

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> MORE MATCHES IN THIS BROADCAST











■ QUERY

■ QUERY ■ QUERY

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TASK 1

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■ SAVED SHOTS



rocket launch

SEARCH

GLOBAL COLOUR LOCAL COLOUR ₩ EDGE

MOTION

INTEXTURE

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REMOVEX

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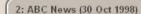
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■ QUERY

■ QUERY

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TASK 1

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■ SAVED SHOTS



rocket launch

SEARCH

GLOBAL COLOUR

LOCAL COLOUR

▼ EDGE TEXTURE **▼** MOTION

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REMOVEX

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REMOVEX



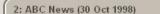
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> MORE MATCHES IN THIS BROADCAST











■ QUERY

■ QUERY

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TASK 1

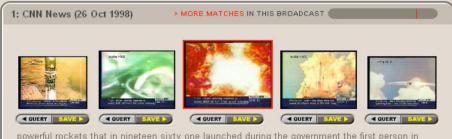
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TASK 1

→ FINISH THIS TASK

■ SAVED SHOTS





Search found 250 matching shots. Following is the ranked list of the search result. Click an image to play the segment, click button to add to your answers, or click OUERY button to improve subsequent query.

TASK 1

■ SAVED SHOTS

delete, or use them to help your subsequent query.

RESULT PAGE: 1 2 3 4 5

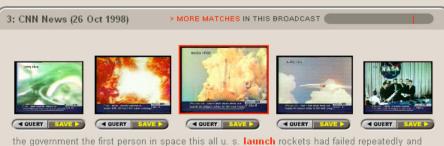


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rocket launch

SEARCH

GLOBAL COLOUR | LOCAL COLOUR

✓ MOTION

▼ EDGE TEXTURE

had failed repeatedly and publicly and there're tests..



REMOVEX

powerful rockets that in nineteen sixty one launched during.



REMOVEX

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REMOVEX

SEARCH RESULT

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1: ABC News (30 Oct 1998)

> MORE MATCHES IN THIS BROADCAST













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2: CNN News (26 Oct 1998)

> MORE MATCHES IN THIS BROADCAST











∢ QUERY

those were the coldest years of the cold war the soviet military arsenal included powerful rockets that in nineteen sixty one launched during the government the first person in space this all u. s. launch rockets

3: CNN News (26 Oct 1998)

> MORE MATCHES IN THIS BROADCAST











■ QUERY

■ QUERY

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(►) (B) (B) (C) (—1) 4: CNN News (26 Oct 1998)

> MORE MATCHES IN THIS BROADCAST



TASK 1

■ SAVED SHOTS

below - this is your **answer** to the current task. Add more, delete, or use them for





QUERY PANEL

Enter term(s) and click SEARCH button. Added shots will be used together for searching. [clear text] [clear all]

rocket launch

SEARCH

GLOBAL COLOUR LOCAL COLOUR

✓ MOTION

▼ EDGE TEXTURE

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REMOVEX

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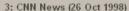






■ QUERY SAVE **■ QUERY**

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> MORE MATCHES IN THIS BROADCAST











■ QUERY

■ QUERY

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(►) (B) (B) (C) (—1) 4: CNN News (26 Oct 1998)

> MORE MATCHES IN THIS BROADCAST



TASK 1

→ FINISH THIS TASK

■ SAVED SHOTS

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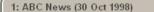


REMOVEX

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■ QUERY

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∢ QUERY



TASK 1

→ FINISH THIS TASK

■ SAVED SHOTS

answers to the current task. Add more, delete, or use them for subsequent query.















Based upon pre-processing video or keyframes to detect features;

Features normally from an ontology and thus related;

TRECVid supports benchmarking feature identification

Useful in retrieval, and as a challenge itself;

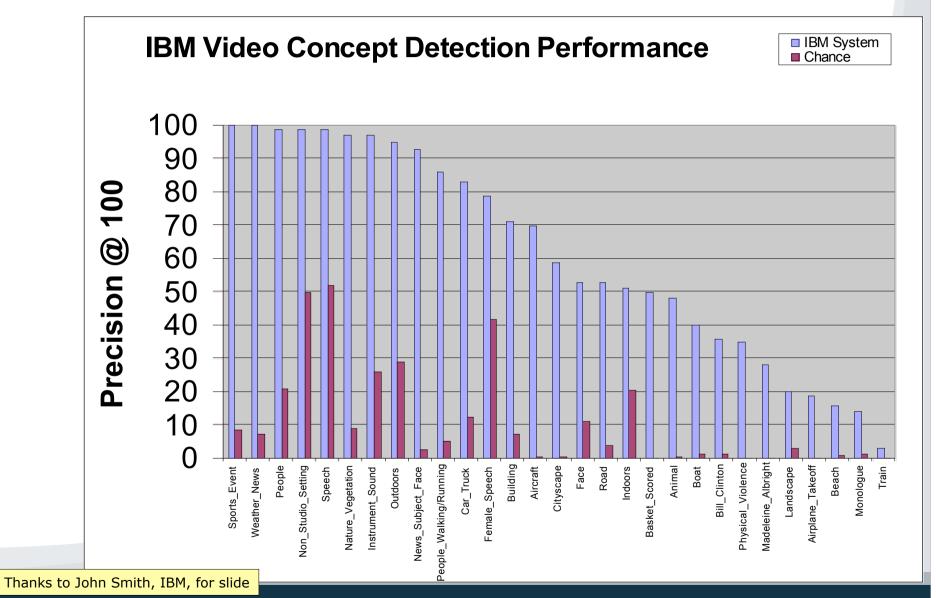
TRECVid Features



- People walking/running: segment contains video of more than one person walking or running
- Explosion or fire: segment contains video of an explosion or fire
- Map: segment contains video of a map
- US flag: segment contains video of a US flag
- Building exterior: segment contains video of the exterior of a building
- Waterscape/waterfront: segment contains video of a waterscape or waterfront
- Mountain: segment contains video of a mountain or mountain range with slope(s) visible
- Prisoner: segment contains video of a captive person, e.g., imprisoned, behind bars, in jail, in handcuffs, etc.
- Sports: segment contains video of any sport in action

Feature Detection Performance









In retrieval, features should be used in combination;

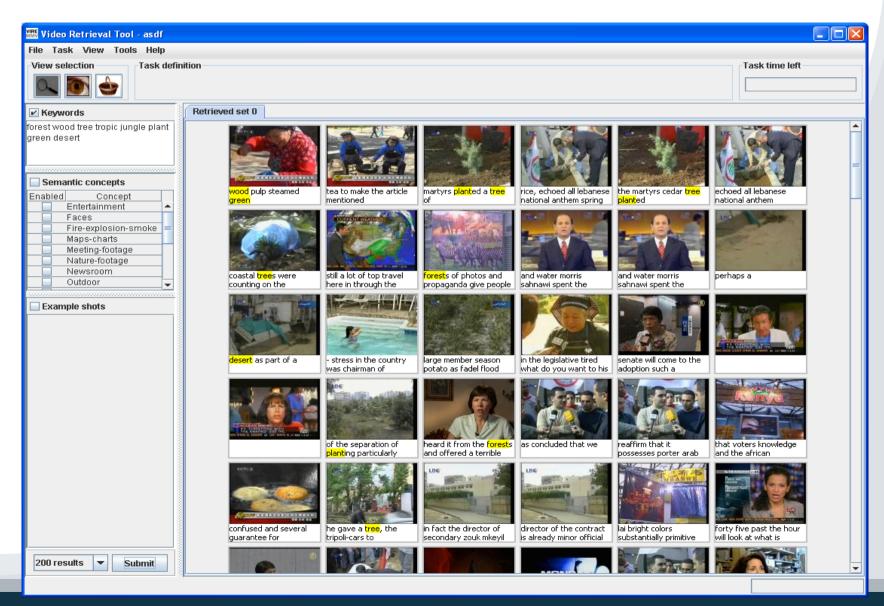
Detector (in)accuracy is compensated for by dependencies among semantic features



- 0.2 Indoor
- 0.8 Outdoor
- 0.7 CityScape
- 0.3 Landscape
- 0.1 People
- 0.0 Face
- 0.8 Sky
- 0.2 Vegetation
- 0.7 Building

TRECVid: Oulu

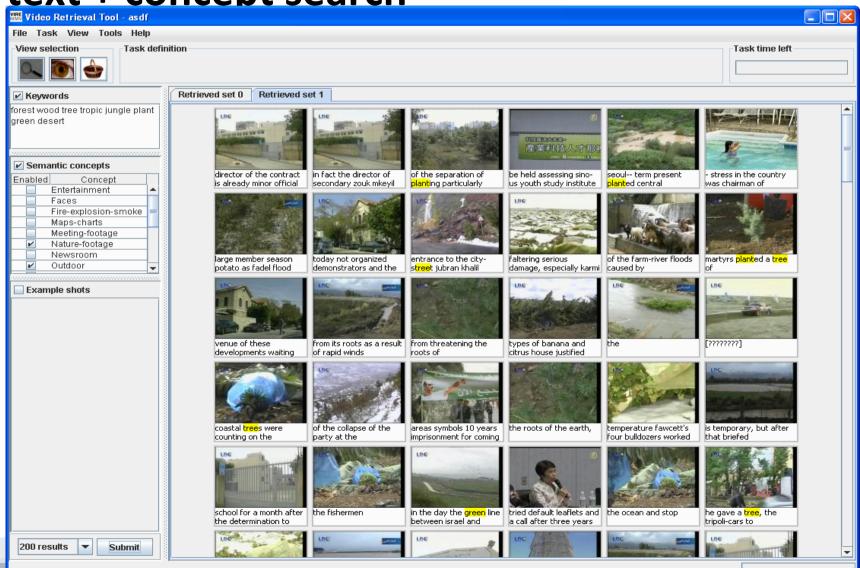




Query tool:



text + concept search



TRECVid Columbia U



Query Input [Reset] Search abbas arafat palestinian january mahmo Pseudo Rel. WordNet Google Exclude Anchor Exclude Neagtive Sound Similarity Exclude Positive		CueX Reraking Start Fusion Weighting Off 25 50 75 Full Concept C C C Image C C C Full-text C C C C
Query Images		ng results 1 - 10 of 68 from 68 ome I All Duplicate Shots I Grid

Suggestions

Google: edit election gaza fatah yasser united states see abbas' september said people palestinians holocaust groups west term security president power

WordNet: yasser instance arab arabian jan gregorian state yisrael authorization authorisation quantity number palestine liberation curate religion

NLP Keywords: abbas arafat january mahmoud israel authority plo minister

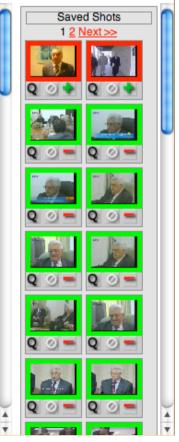
Original Query: abbas arafat palestinian january mahmoud israel authority prime plo minister

Execution Time: 0.591857s Started: 09/19 12:21:15 pm

[XML][Browse] [Logout eric]

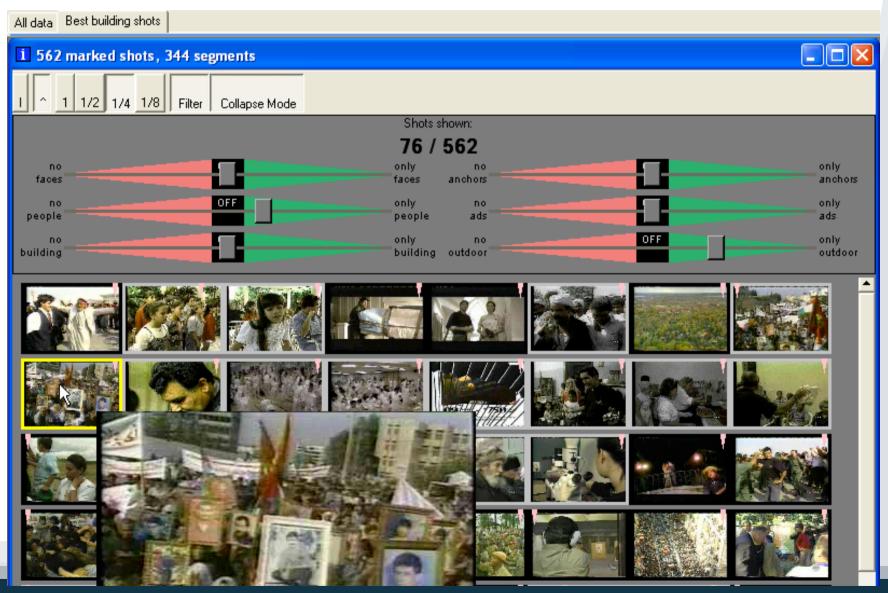






CMU: Interface to Support Rich Visual Sets







Use visual objects as queries

Automatic Understanding of Objects?

Take a simple object, a car 4 wheels, fairly recognisable shape Should not pose problems?

Well, it is not quite that easy...



Automatic Understanding of Objects











Automatic Understanding of



Ohiects



























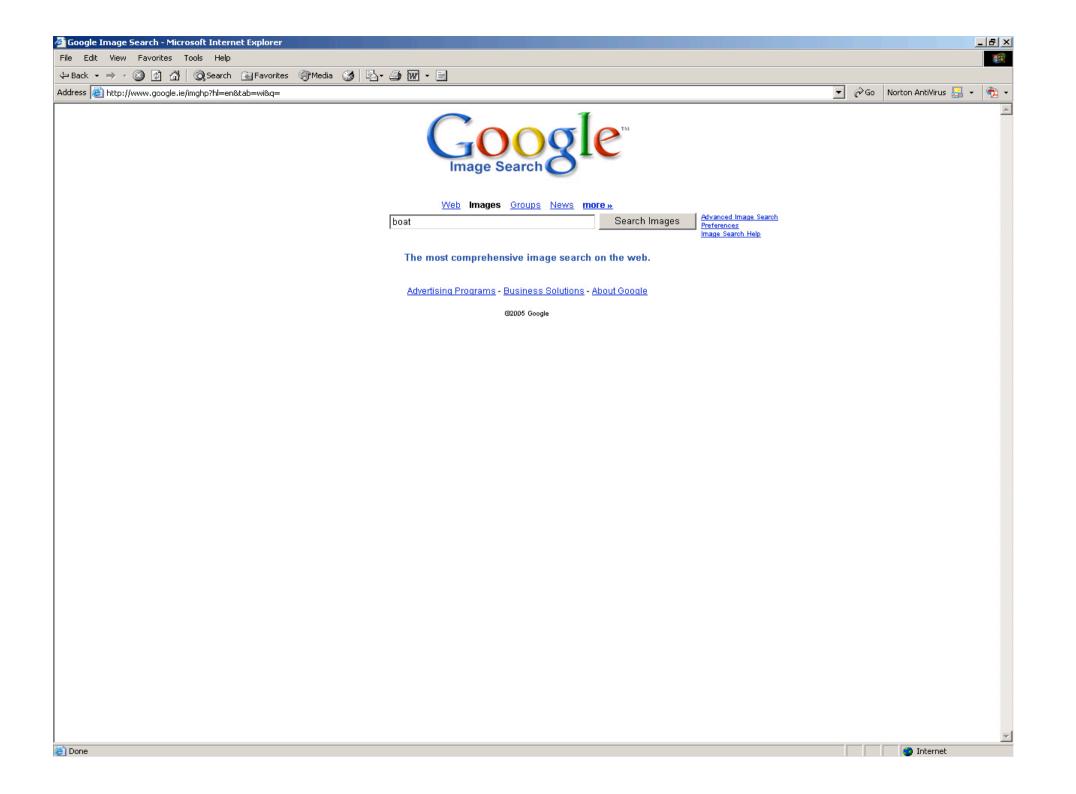


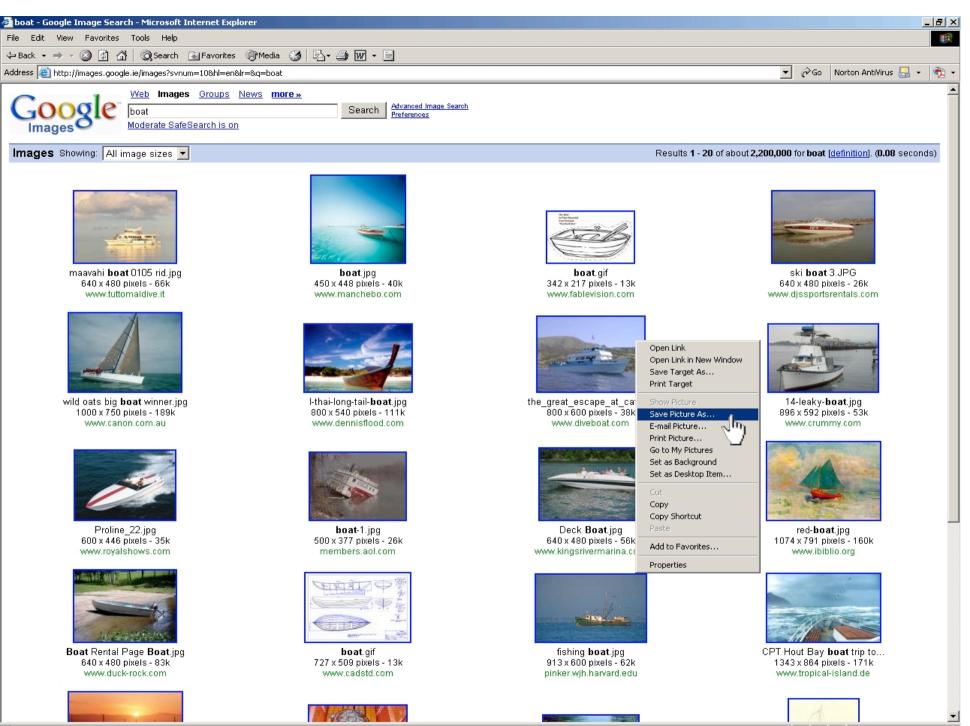


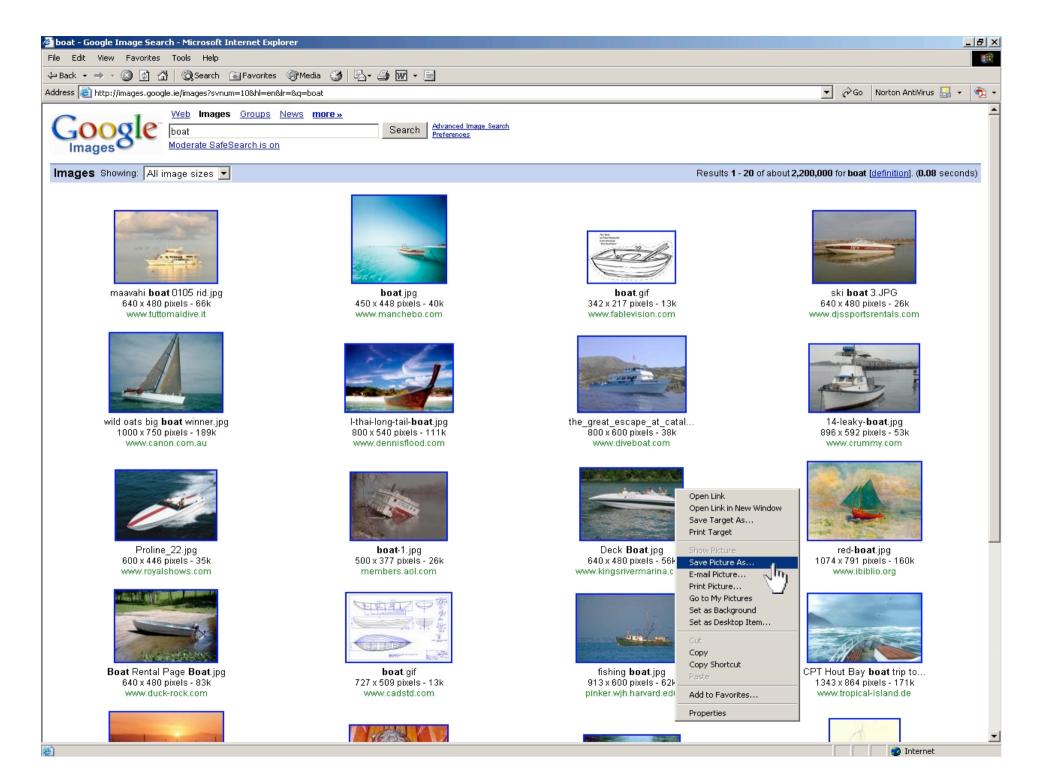


For certain types of user query, with patience, and time, object-based retrieval can help;

Another Físchlár system shows how it can be done

















Internet Explorer



Share-to-Web Upload Folder





Object Segmentation

















Internet Explorer



Share-to-Web Upload Folder

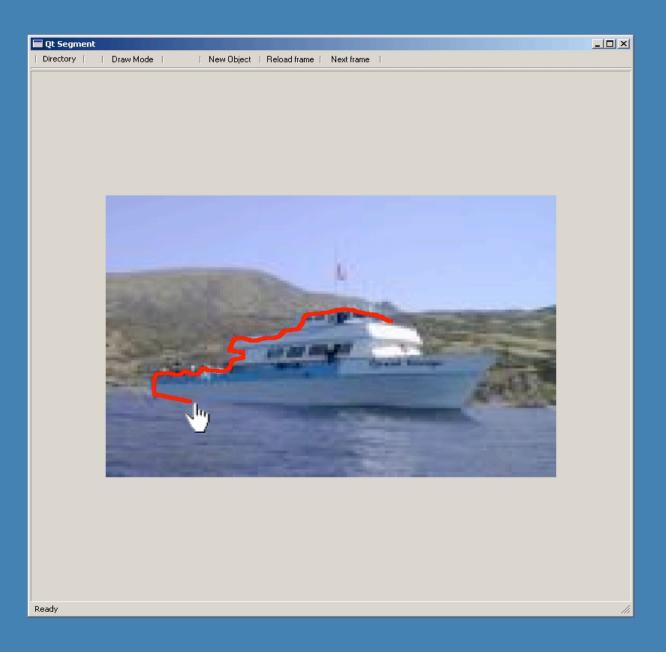




Object Segmentation

















Internet Explorer



Share-to-Web Upload Folder

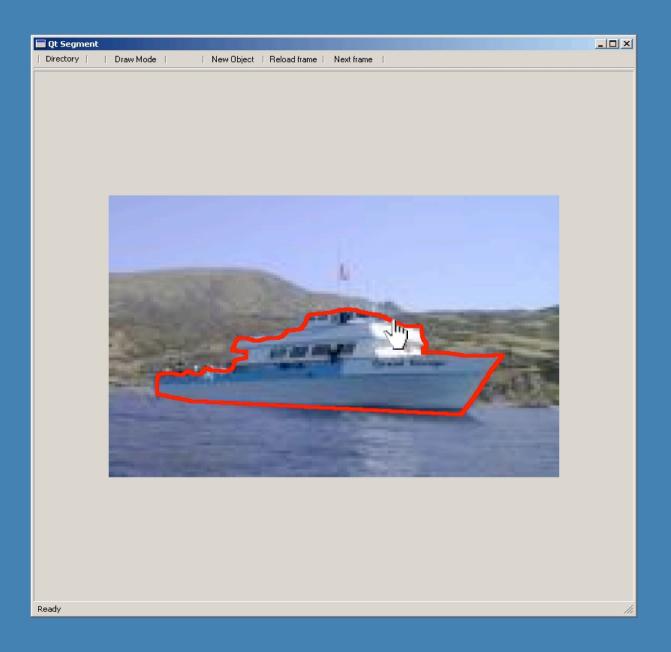




Object Segmentation

















Internet Explorer



Share-to-Web Upload Folder

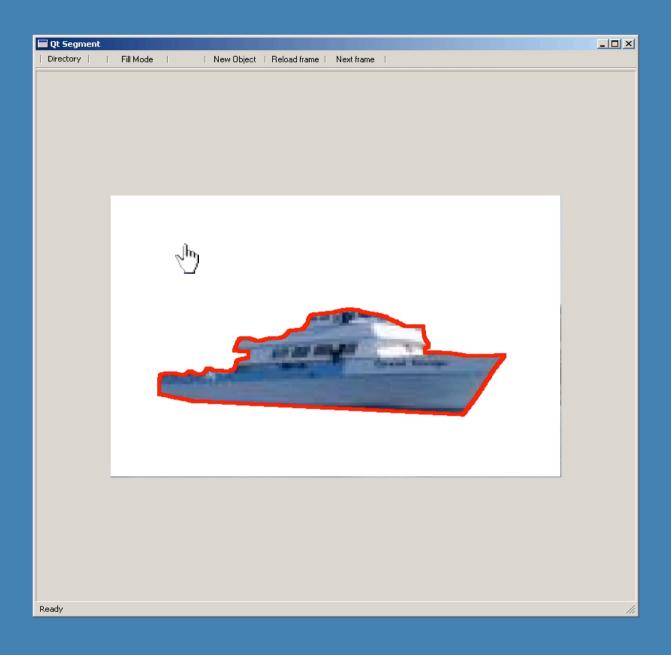




Object Segmentation









My Computer





My Network Places





Internet Explorer



Share-to-Web Upload Folder





Object Segmentation

















Internet Explorer



Share-to-Web Upload Folder





Object Segmentation

















Internet Explorer



Share-to-Web Upload Folder

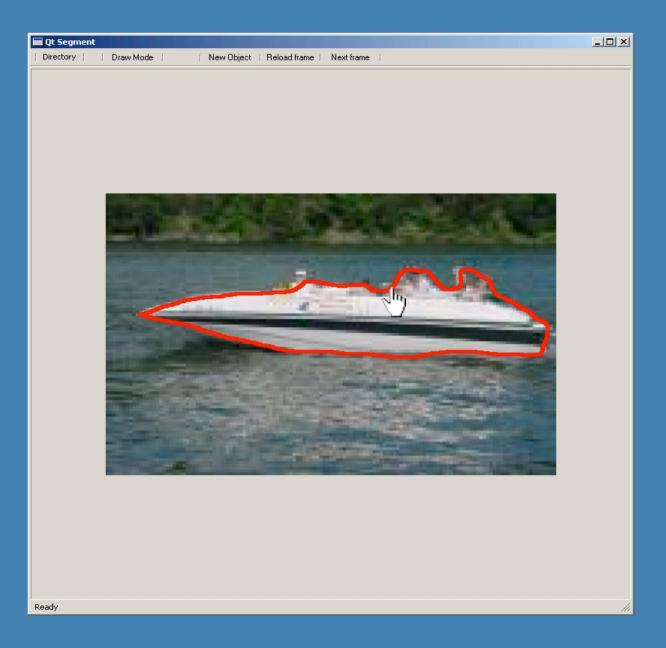




Object Segmentation

















Internet Explorer



Share-to-Web Upload Folder

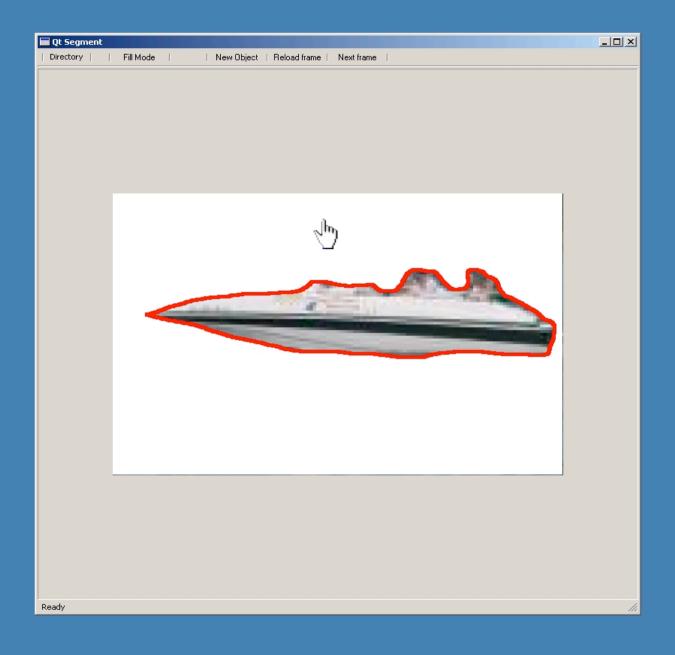




Object Segmentation

















Internet Explorer



Share-to-Web Upload Folder





Object Segmentation









My Computer





My Network Places





Internet Explorer



Share-to-Web Upload Folder

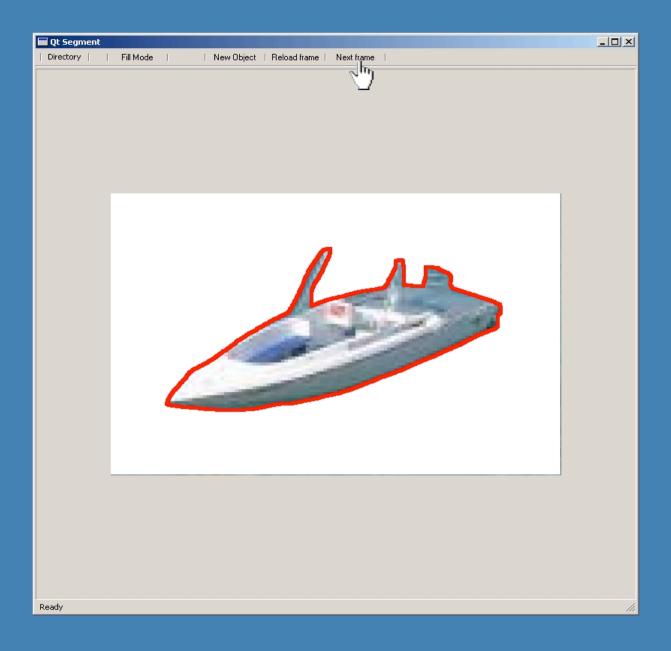




Object Segmentation







QUERY PANEL

The images and objects below will be used for searching. Refresh the query panel or add/remove items below and click SEARCH button. [ADD EXTERN LIMG/OBJ]

You can search objects when there is o icon beside an image.

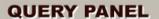
SEARCH >>

SEARCH RESULT

Following is the ranked list of the search result. An image with <a> icon indicates it contains an object within it. Click on QUERY button to use an image/object as query, click on SAVE button to save this point in bookmark.







The images and objects below will be used for searching. Refresh the query panel or add/remove items below and click SEARCH button. [ADD EXTERNAL IMG/OBJ]

You can search objects when there is o icon beside an image.

SEARCH >>

SEARCH RESULT

All Files (*.*)

Files of type:

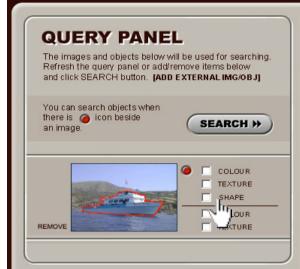
Following is the ranked list of the search result. An image with <a> icon indicates it contains an object within it. Click on QUERY button to use an image/object as query, click on SAVE button to save this point in bookmark.

▾

Cancel

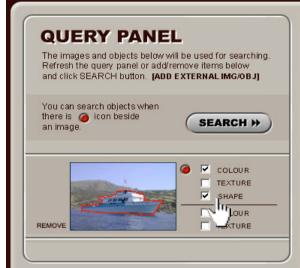


SAVED POINT



Following is the ranked list of the search result. An image with
it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.





Following is the ranked list of the search result. An image with
it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.





Following is the ranked list of the search result. An image with
it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.

SAVED POINT



Following is the ranked list of the search result. An image with
it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.

SAVED POINT



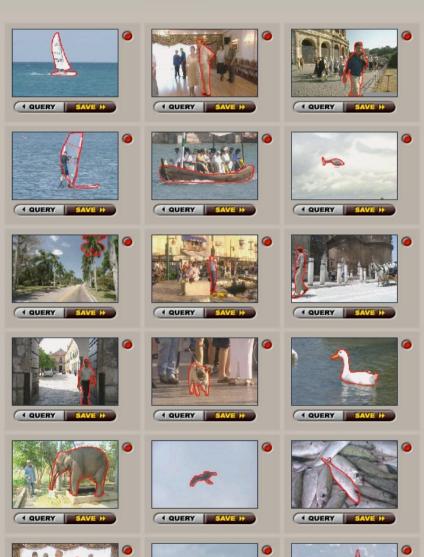
Following is the ranked list of the search result. An image with
it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.

SAVED POINT



Following is the ranked list of the search result. An image with o icon indicates it contains an object within it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.

RESULT PAGE 2 3 4 5



SAVED POINT

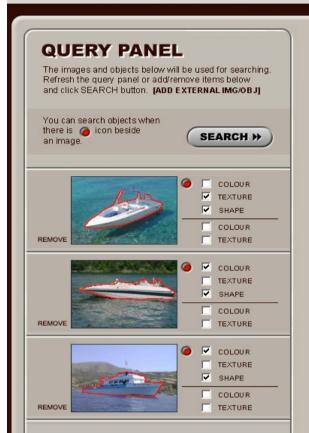


Following is the ranked list of the search result. An image with o icon indicates it contains an object within it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.

RESULT PAGE 2 3 4 5



SAVED POINT



Following is the ranked list of the search result. An image with o icon indicates it contains an object within it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.

RESULT PAGE 2 3 4 5



SAVED POINT

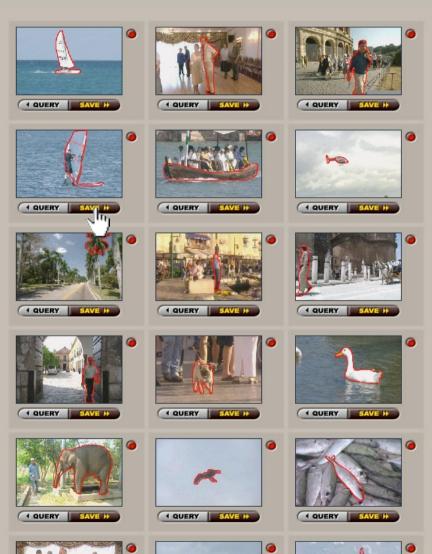
The saved points in the rush footage are displayed below.





Following is the ranked list of the search result. An image with o icon indicates it contains an object within it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.

RESULT PAGE 2 3 4 5



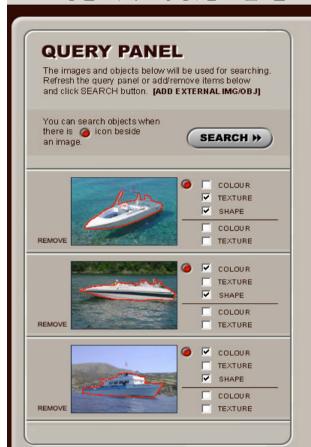
SAVED POINT

The saved points in the rush footage are displayed below.



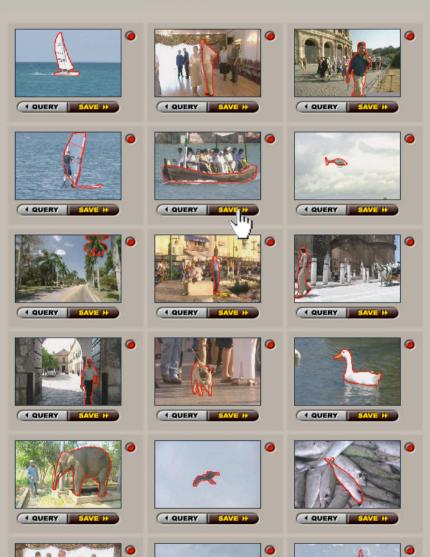
REMOVE





Following is the ranked list of the search result. An image with o icon indicates it contains an object within it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark.

RESULT PAGE 2 3 4 5



SAVED POINT

The saved points in the rush footage are displayed below.



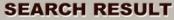
REMOVE



REMOVE







Following is the ranked list of the search result. An image with o icon indicates it contains an object within it. Click on **QUERY** button to use an image/object as query, click on **SAVE** button to save this point in bookmark



SAVED POINT

The saved points in the rush footage are displayed below.



REMOVE



REMOVE







SAVED POINT

The saved points in the rush footage are displayed below.



REMOVE



REMOVE







On small, closed video libraries, it works well

Annual VideOlympics showcase shows it working in practice





We're still only doing keyframe/image and not video (with motion of objects and cameras);

We're still doing shot retrieval, not scene, or clip;

Feature detection accuracy, scale-up to more features, relationships between features, move away from independent solo to ontology-based ... need to progress this;

Combining features, keyframe match, text and objects in a natural and usable way ... the *learnability* of the interface;

Dynamically adjusting retrieval to the query/video type;

IT IS NOT MAINSTREAM YET, NOT YET READY FOR THE BIG TIME, HAS SOME WAY TO GO, BUT WILL GET THERE;