

# TREC Video Retrieval Evaluation

## TRECVID

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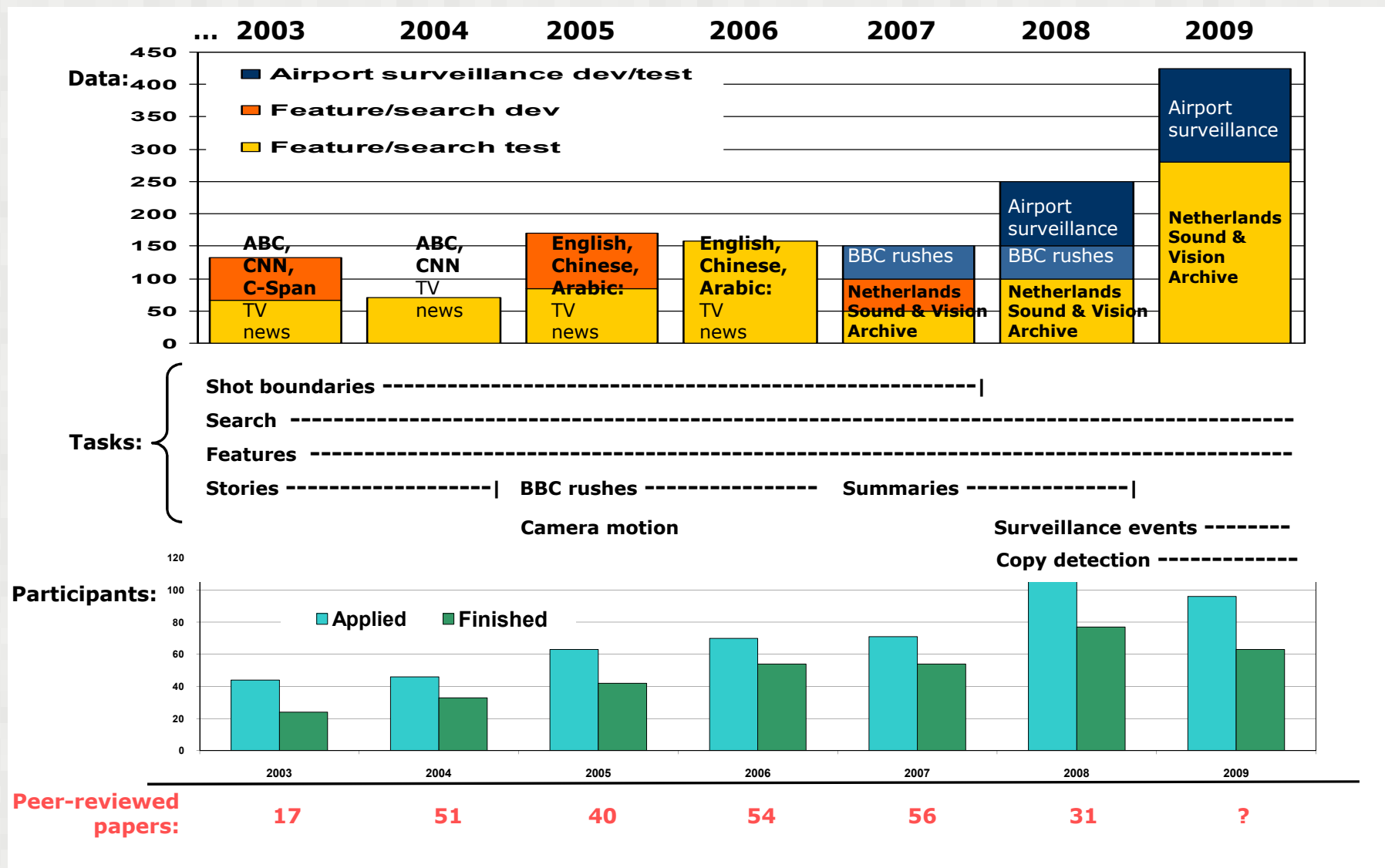
# Goals and strategy

- Promote progress in content-based analysis, detection, retrieval in large amounts of digital video
  - combine multiple errorful sources of evidence
  - achieve greater effectiveness, speed, usability
  
- Confront systems with unfiltered data and realistic tasks
  
- Measure systems against human abilities

# Goals and strategy

- Focus on relatively high-level functionality – near that of an end-user application like **interactive search**
- Supplement with focus on supporting and related automatic components:
  - Automatic search, High-level feature detection
  - Content-based copy detection, Event detection
- Integrate and profit from advances in low-level functionality, more narrowly tested elsewhere:
  - face recognition, text extraction, object recognition, etc.

# TRECVID Evolution



# 2009: Details

- Data:
  - 100+280 hrs - Netherlands Institute for Sound and Vision (S&V)
  - 100+50 hrs of airport surveillance data - UK Home Office
  
- 4 evaluated tasks
  - S&V news magazine, cultural, educational/entertainment
    1. Content-based copy detection - 1407 video queries, 1407 audio queries, 9849 audio+video queries
    2. High-level feature extraction - 20 features
    3. Search (automatic, manually-assisted, interactive) - 24 multimedia topics
  - Airport surveillance video (5 cameras \* 2 hours \* 10 days)
    5. Surveillance event detection

## TV2009 Finishers

# Groups Applied	# Groups Finished	Task code	Task name
51	20	CD	Copy detection
45	11	ED	Event detection
70	42	FE	Feature extraction
48	18	SE	Search

# TV2009 Finishers

Aristotle University of Thessaloniki	--	FE	SE	--
Asahikasei Co.	--	FE	--	CD
AT&T Labs - Research	--	--	--	CD
Beijing University of Posts and Telecom.-BUPT-MCPRL	ED	FE	SE	CD
Beijing University of Posts and Telecom.-PRIS	ED	**	SE	--
Brno University of Technology	**	FE	SE	**
Budapest Academy of Sciences	--	**	SE	**
Carnegie Mellon University	ED	FE	**	--
Centre for Research and Technology Hellas	--	FE	SE	-
Chinese Academy of Sciences-IVA_NLPR_IA_CAS	**	FE	--	**
Chinese Academy of Sciences-MCG-ICT-CAS	--	--	SE	CD
City University of Hong Kong	**	FE	SE	CD
Computer Research Institute of Montreal	--	--	--	CD
Florida International University	--	FE	--	**
France Telecom Research & Development - Beijing	--	FE	--	--
Fudan University	--	FE	--	CD
Fuzhou University	**	FE	--	**
GDR ISIS - IRIM consortium	**	FE	**	**

\*\* : group applied but didn't submit

-- : group didn't apply for the task

# TV2009 Finishers

Helsinki University of Technology TKK	--	FE	SE	-
IBM Watson Research Center	**	FE	**	CD
Institut EURECOM	**	FE	--	--
Istanbul Technical University	--	--	--	CD
IUPR - DFKI	--	FE	--	--
JOANNEUM RESEARCH Forschungsgesellschaft mbH-JRS	**	**	--	CD
KB Video Retrieval	--	--	SE	--
Kobe University	--	**	SE	--
Laboratoire d'Informatique de Grenoble	--	FE	**	--
Laboratoire d'Informatique Fondamentale de Marseille	--	FE	--	--
Laboratoire REGIM	**	FE	SE	--
LSIS, Université Sud Toulon Var	--	FE	--	--
Nanjing University	--	--	--	CD
National Institute of Informatics	**	FE	SE	CD
NEC Laboratories America, Inc. and UIUC	ED	**	**	**
NHK Science and Technical Research Laboratories	ED	FE	**	**
Oxford/IIIT	--	FE	--	--
Peking University-PKU-ICST	**	FE	SE	**
Peking University-PKU-IDM	ED	**	--	**
Shanghai Jiao Tong University-IICIP	ED	FE	**	--
Shanghai Jiao Tong University-IS	--	FE	--	--
Simon Fraser University	ED	--	--	--

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# TV2009 Finishers

Telefonica I+D	--	--	--	CD
The Institute of Statistical Mathematics	--	FE	--	--
The Open University	--	**	SE	-
TNO	--	--	--	CD
Tokyo Institute of Technology	ED	FE	--	--
Toshiba Corporation	ED	--	--	**
Tsinghua University-IMG	**	FE	**	CD
Tsinghua University-MPAM	--	FE	--	CD
TUBITAK UZAY	ED	FE	--	CD
Universidad Autónoma de Madrid	**	FE	**	**
Universidad Carlos III de Madrid	--	FE	--	--
University of Amsterdam	**	FE	SE	--
University of Brescia	--	--	--	CD
University of Central Florida	--	FE	--	--
University of Electro-Communications	**	FE	**	--
University of Glasgow	--	**	SE	**
University of Karlsruhe (TH)	--	FE	--	--
University of Marburg	--	FE	**	--
University of Ottawa	**	--	--	CD
University of Surrey	--	--	SE	--
UPS - IRIT - SAMoVA	--	FE	**	--
Xi'an Jiaotong University	--	FE	**	CD
Zhejiang University	--	FE	SE	--

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# Additional resources and contributions

- Georges Quénot and Stéphane Ayache again organized a collaborative annotation; participants annotated 10 new features
- NII and the Laboratoire d'Informatique de Grenoble mirrored the video data
- Christian Petersohn at the Fraunhofer (Heinrich Hertz) Institute in Berlin provided the master shot reference.
- Roeland Ordelman and Marijn Huijbregts at the University of Twente donated the output of their ASR system run on the S&V data.
- The LIMSI Spoken Language Processing Group contributed a speech transcription of the 2007-2009 S&V data using their Dutch recognizer.

# Additional resources and contributions

- Christof Monz of Queen Mary, University London contributed MT (Dutch to English) for the S&V video.
- For the copy detection task we reused the video transformation tools created by Laurent Joyeux for INRIA in 2008.
- Dan Ellis at Columbia University devised and applied the audio transformations to produce the audio-only queries for copy detection.
- The MediaMill team at the University of Amsterdam donated detector scores for 64 concepts trained over the last 3 years.
- The Columbia U. – City U. Hong Kong team donated detector scores for the TRECVID 2009 test data using the CU-VIREO374 models.

# Agenda: Day 1

- ❑ Arranged by task
- ❑ Time for discussion of approaches & evaluation
- ❑ **Monday**
  - ❑ Intros
  - ❑ Search
  - ❑ *Internet Archive Creative Commons video preview*
  - ❑ Copy detection
  - ❑ Lunch
  - ❑ Copy detection (conclusion)
  - ❑ *VideoCLEF report*
  - ❑ Demo/Poster previews
  - ❑ Demos & Posters
  - ❑ Workshop supper

# Agenda: Day 2

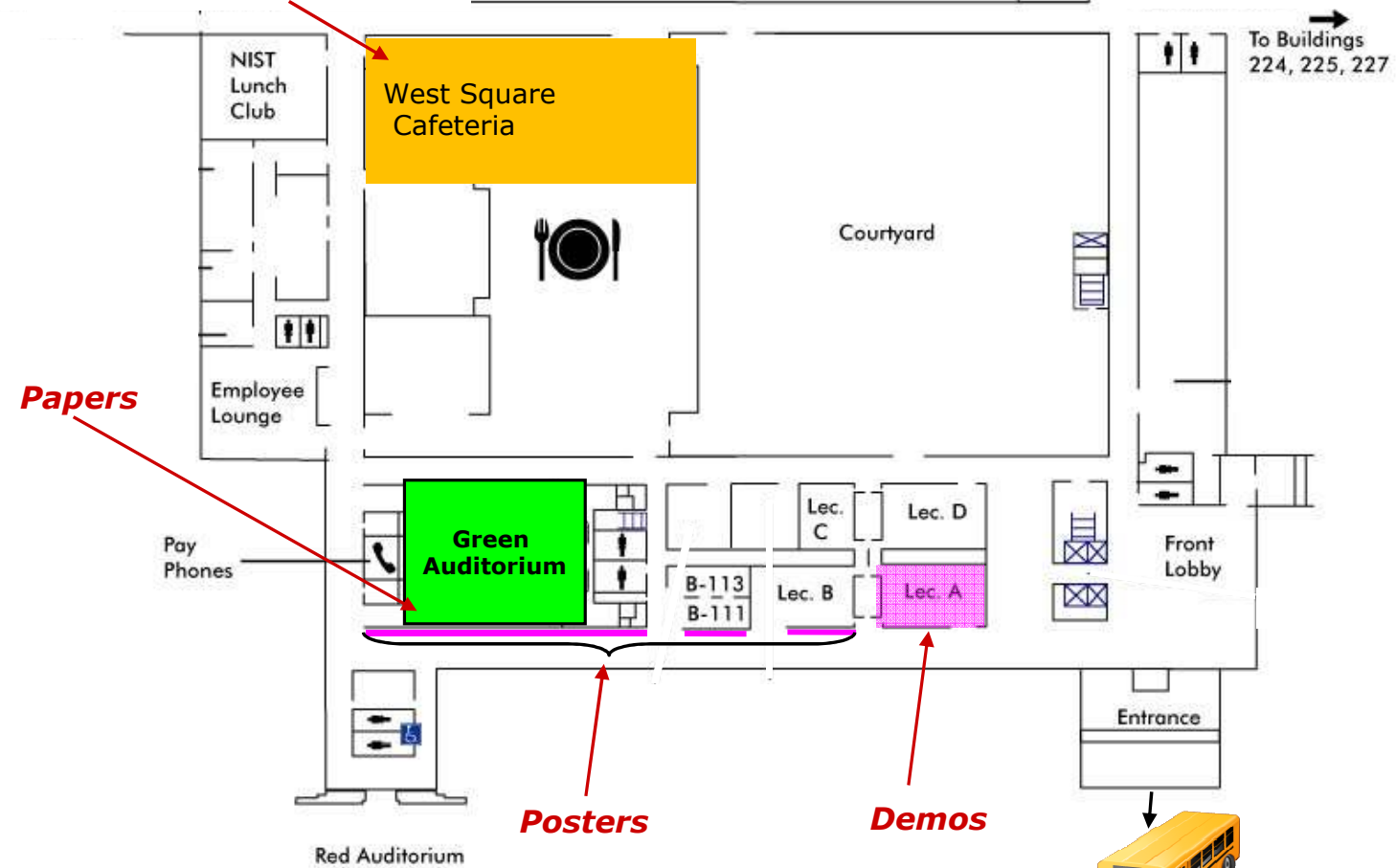
## Tuesday

- High-level feature extraction
- Airport surveillance event detection
- Lunch
- Airport surveillance event detection (conclusion)
- TRECVID planning
  - Discussion of proposals
    - Real world task (user scenario)
    - Data to be used
    - System task (operational definition)
    - Evaluation
      - Measure(s)
      - Resources
        - Training data
        - Test data annotation / system output judgments
    - Procedures

# Map: NIST Admin. Building, 1<sup>st</sup> Floor

(included in the notebook)

**"Continental breakfast"  
lunch, and most snacks**



TRECVI 2009 @ NIST



**Bus to/from  
Crowne Plaza  
SleepInn**

# Reminders

- ❑ If you are driving to NIST rather than taking the NIST bus, you don't need to stop at the Visitor Center tomorrow.
  - ❑ Just show you conference badge and photo ID at the gate as you drive in.
  - ❑ Wear your badge at all times while at NIST
- ❑ Lunch will be in the NIST West Square Cafeteria
  - ❑ Your ticket (from your badge holder) will be collected as you enter the cafeteria
  - ❑ Choose whatever you want from the buffet and proceed to a table
- ❑ The workshop supper is close by at Growler's Microbrewery (upstairs). This is a casual restaurant. Check the agenda for the bus schedule.
  - ❑ One ticket is included with your registration
  - ❑ You can buy additional tickets at the registration desk
  - ❑ If you don't plan to attend, please turn in your ticket at the registration desk so someone else can attend.
- ❑ If you are giving a talk, please have your computer connected or presentation loaded **BEFORE** the session begins.
- ❑ Poster supplies are available at the registration desk. Posters go up anywhere on the numbered poster wall (see map). Demos go in Lecture Room A (see map).
- ❑ Wireless access info is in your badge holder. Do not share your password.