

# 'Adaptive' Search-by-Content Technologies

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## Experience on image search-by-content



- Surveillance streams for Nuclear Safeguards
- Search for relevant events.
- Out of 20000 images, less than 100 are relevant!
- Data reduction: feature selection, image retrieval or classification & **relevance feedback by the user**.
- **Design of performance metrics (to guide self-tuning search algorithms)**
- Tests in 'real' settings.



## Need more work on ...

- **New ways to express what the user is searching for (keywords are ~ok for text, but what is the equivalent for images, video, music?)**
- **For non-textual modalities, relevance feedback by the user is crucial to guide search: do we have good enough machine learning algorithms that can learn from few examples and in-real time re-classify very large sets of images, video streams, etc?**



## Need more work on ...

- **Performance indexes in search: ... 'Precision & Recall' do not always capture what is 'good' for the user.**
- **Try the P2P option!**
- **Finally, the 'surface web' is just a part of the content we may wish to search: search technologies for the 'deep web' ?  
→ aggregate content from various structured and unstructured data sources.**