Organising a Large Quantity of Lifelog Images

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LIFELOGGING - CAPTURING ASPECTS OF YOUR LIFE, FOR YOU

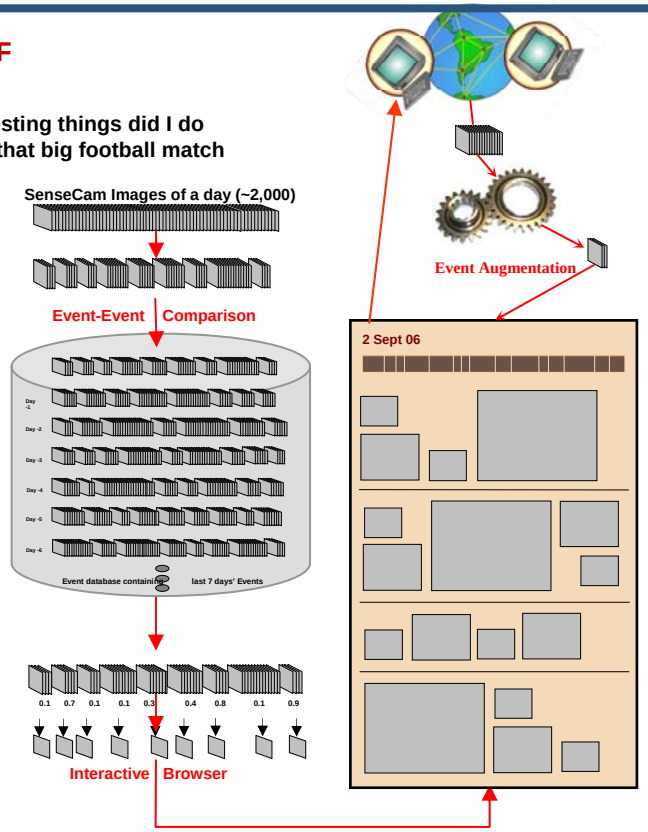
- When was my last walk at the park? What interesting things did I do last Wednesday? Let me see all the pictures of that big football match I was at in Croke Park in July, etc.

LIFELOGGING DEVICE - THE SENSECAM

- Developed and funded by Microsoft Research Cambridge
- Captures an average of 2,000 images per day (approximately 650,000 per year)
- Intelligently captures images based on accelerometer, light, temperature, and infrared sensors

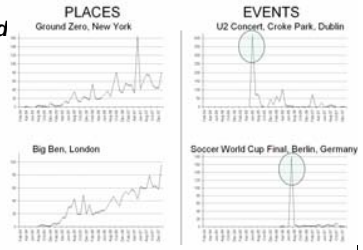
EVENT SEGMENTATION

- 2,000 images presents the user with too much information
- We group images together into distinct events/activities i.e. breakfast, on airplane, at work on PC, etc.
- Trained many event segmentation solutions using 5 data sources
- Dataset of 271,163 images from 5 users over 1 month
- Most efficient to use sensor sources only

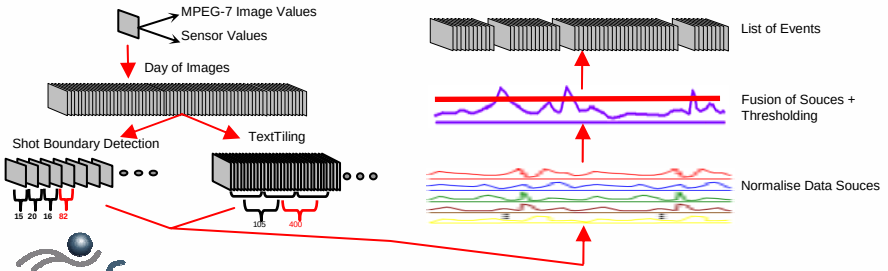


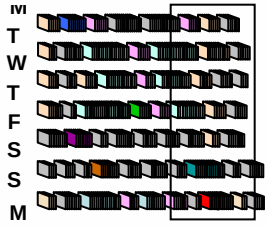
Augmenting Low-Quality LifeLog Images With External High-Quality Images

- 54 MILLION *Geotagged* images on Flickr.com
- Images can be filtered by time and location
- Only 22% of images uploaded to Flickr are geotagged though



- Typically 2 query types
  - Place Specific e.g. Eiffel tower, Big Ben, etc.
  - Event Specific e.g. U2 concert, soccer final, etc.
- Automatic analysis on tags of geo-referenced images to construct new query terms to find non-geotagged images/videos e.g. from YouTube, MSN Images, etc.
- Tag analysis yields 123% extra geotagged photos





Identifying Important Events

- Want to place greater emphasis on more important/ significant events
- Events with the presence of faces indicate important events (face detection precision = 63% on 1,758 images)
- Novel events are most *dissimilar* to past events
- 949 judgements made by 5 users on various methods
- Best approach to Event importance combines face-to-face conversation detection + novelty

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