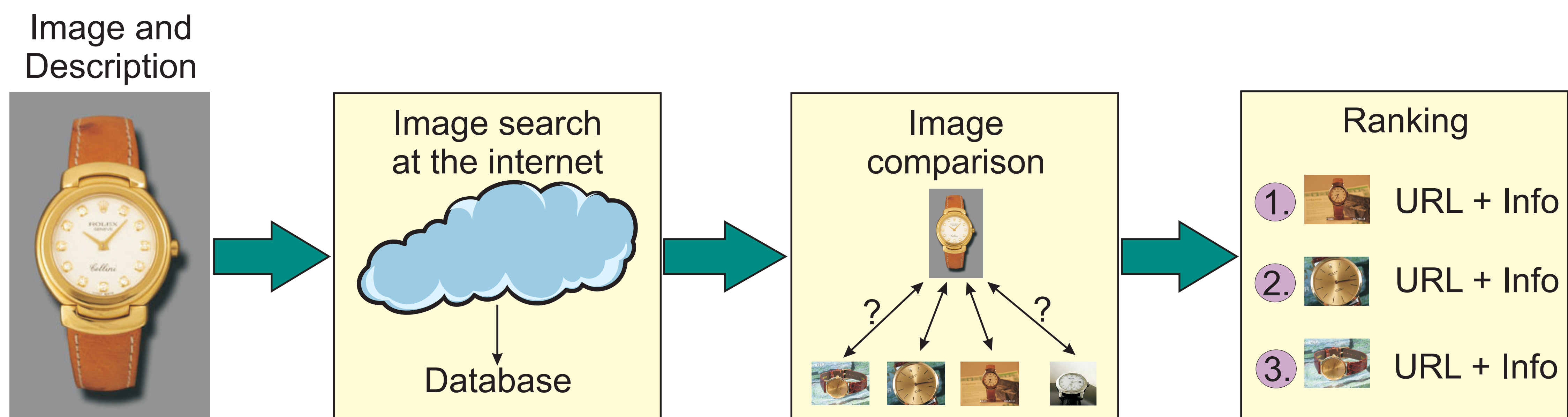


# Inspector Computer

M. Sutter, T. Müller, R. Stotzka, T. Jejkal, M. Holzapfel, H. Gemmeke

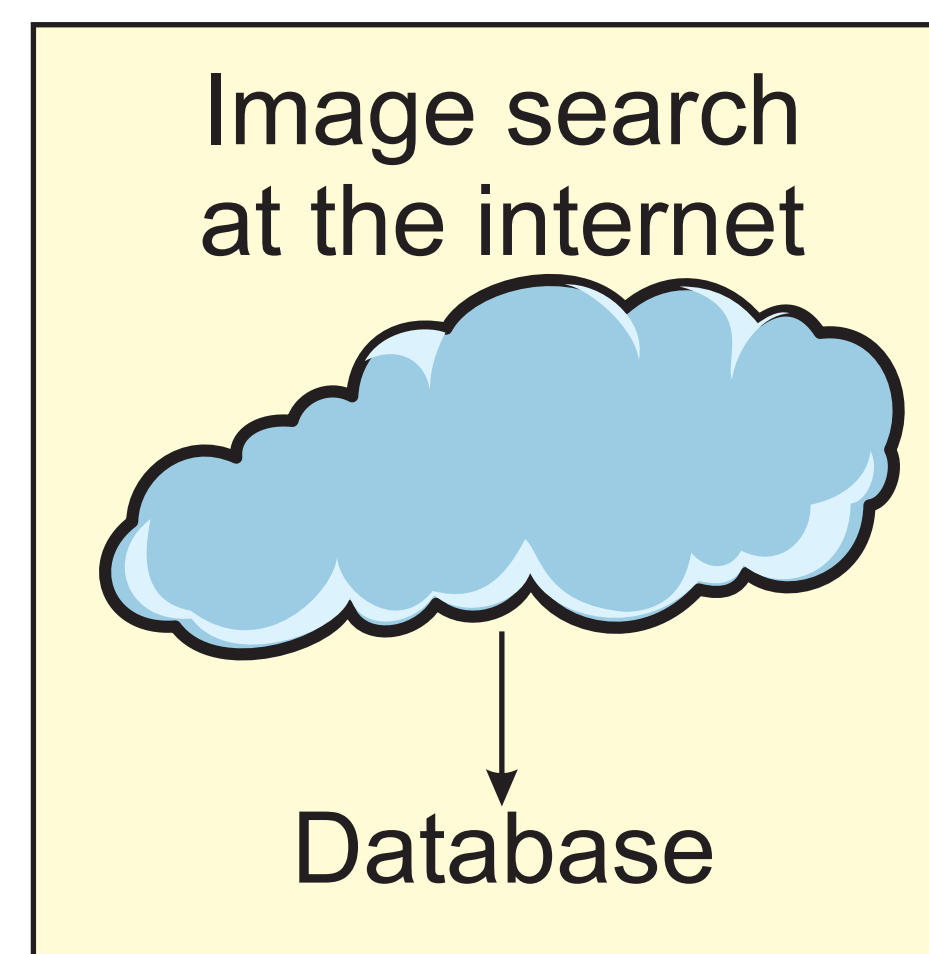


## Motivation



This watch was stolen (reference image)  
If it is offered for sale in the internet, is it possible to retrieve it?

## Solution: Grid Computing



- Automatic image search for “watch” images at e.g. ebay, Google, ...
- Storing of the images for conservation of evidence in a database

## Problems

### Manual search impossible:

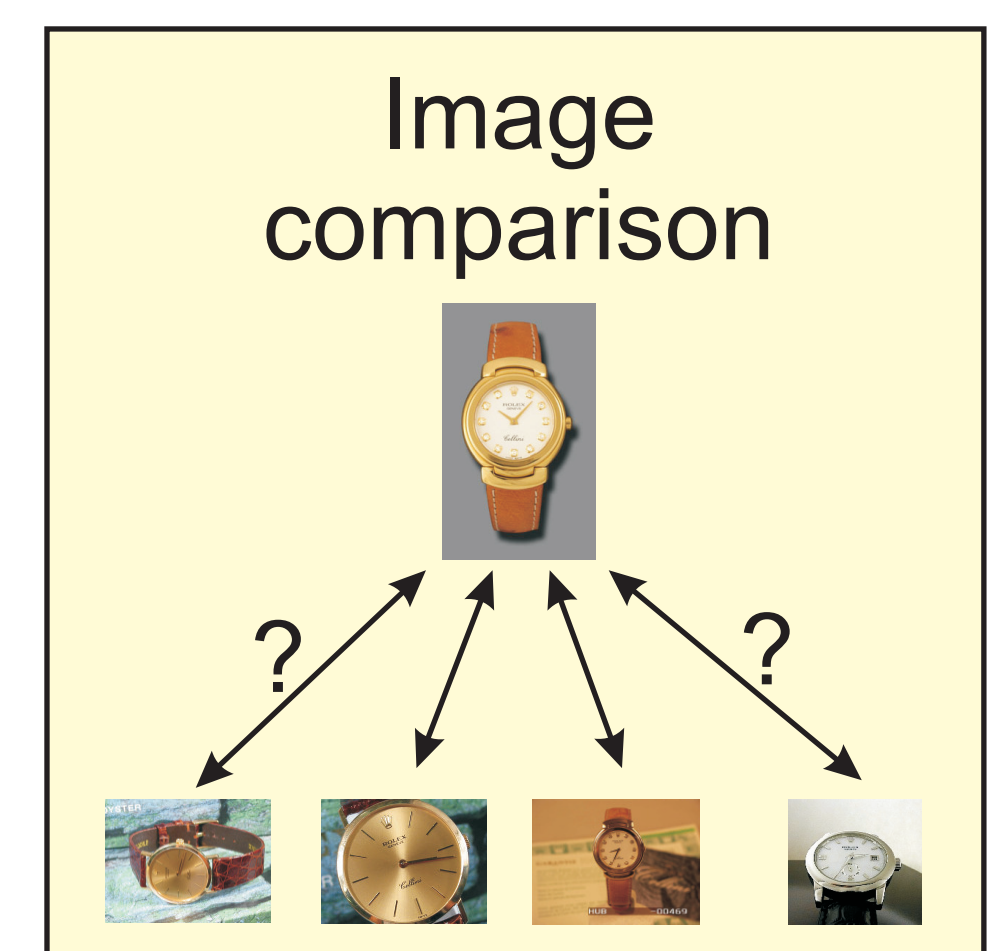
- Several thousand images have to be checked by the owner
- Small probability for success

### Automatic search very complex:

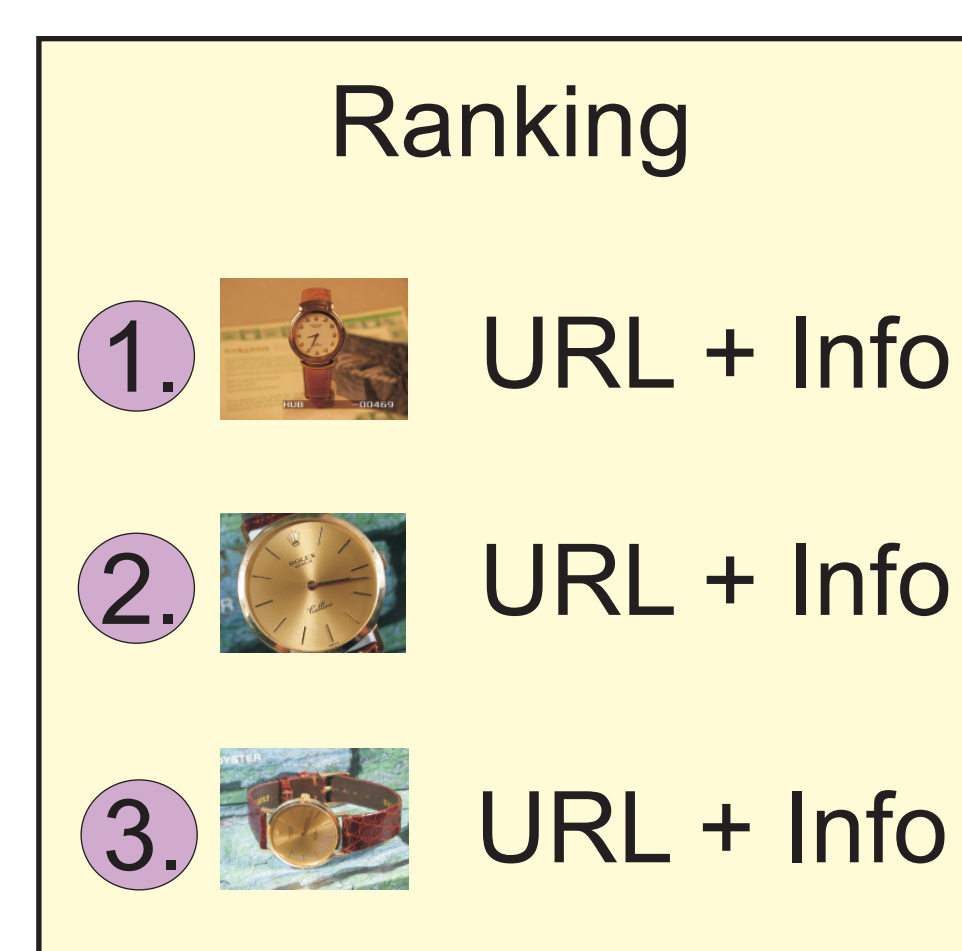
- High network traffic for searching (several thousand images)
- High computation time for comparing (several days)
- Comparison of different objects in the images
- Detection of identical objects captured under different conditions, e.g. illumination

➔ Suitable computer infrastructure for automatic search is needed

- Parallel object comparison of the detected images with the reference image
- Object comparison based on the content of the images using a similarity metric



## Results



- Result is a rank
- Descending in the order of the similarity metric
- Manual examination of the images with the highest ranks

## Conclusion

- System is an effective assistance for finding stolen goods in the internet
- Reduces the manual effort – in average the searched object is expected within the highest 8 ranks

➔ General image search engine based on a reference image and a description