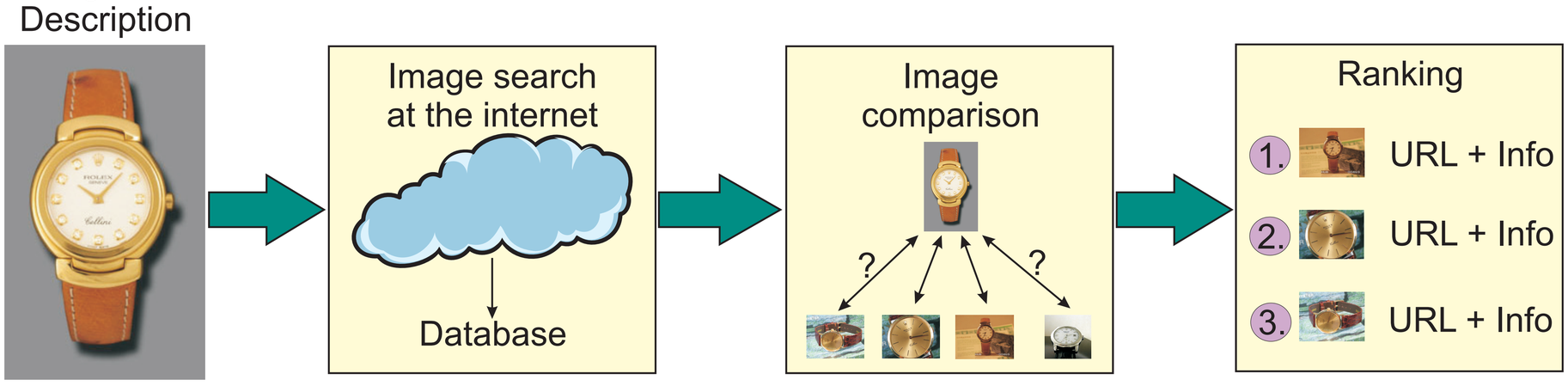
Forschungszentrum Karlsruhe
in der Helmholtz-Gemeinschaft

Institute for Data Processing and Electronics

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?

Problems

Manual search impossible:

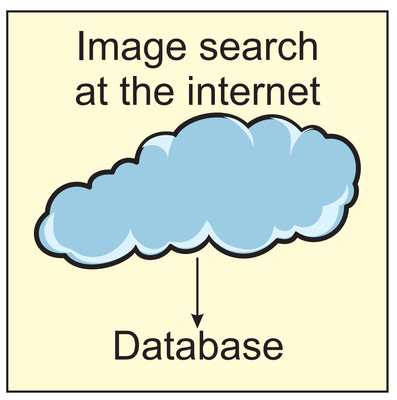
- Several thousand images have to be checked by the owner
- Small probability for success

Automatic search very complex:

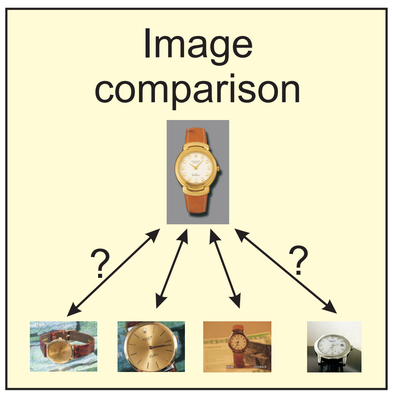
- High network traffic for searching (several thousand images)
- High computation time for comparing (several days)
- Comparsion of different objects in the images
- Detection of identical objects captured under different conditions, e.g. illumination

→ Suitable computer infrastructure for automatic search is needed

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
- 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

HELMHOLTZ GEMEINSCHAFT

mit der Universität Karlsruhe verbunden in KIT Karlsruhe Institute of Technology

Contact:
Michael Sutter
phone: +49 7247 82-5676
Michael.Sutter@ipe.fzk.de