

CALL FOR PAPERS

Recent years have witnessed a remarkable popularization of camera enabled mobile devices, such as smart-phones and tablets in our daily lives. Combined with broadly available wireless Internet, they now emerge as ubiquitous platforms for deployment of mobile visual search and augmented reality applications. Yet, some technical challenges still exist in design of such systems, considering the need for real-time response, and the high search accuracy in practical applications. A visual database for mobile image matching is typically stored in a cloud. Hence, for a visual comparison, information must be either uploaded from a mobile to a server, or downloaded from a server to a mobile. With relatively slow wireless links, the response time of a system heavily depends on how much information must be transferred in both directions. Moving some operations, such as the extraction and comparison of descriptors and tracking of objects to the client side can reduce the latency, but may increase power consumption. Other issues include the capability to work with very large (web-scale) databases, complexity of indexing and search operations, and storage usage on the server side.

A number of publications in the research community are addressing these topics, thus rapidly enhancing the state of the art: design of new and efficient descriptors and their compression, novel indexing techniques for large scale databases, object tracking algorithms represent examples of new classes of technologies that can be used to improve performances of mobile visual search and augmented reality applications.

The aim of this special issue is to report a selected sample of the latest research results aiming at improving visual search and visual augmented reality systems. High quality, original contributions including both theory and practical oriented papers are requested. Topics of interest include, but not limited to:

- Design of client-server architectures for visual search and visual augmented reality;
- New descriptors design;
- Coding techniques for compact descriptors or image signatures;
- Optimizations for transmission of descriptors over the network;
- Usage of side information to minimize latency time;
- Optimization of descriptor matching and indexing schemes for searching through web-scale databases;
- Lightweight object tracking techniques ;
- Design of hardware portable solutions;
- Techniques for multiple objects recognition and tracking.

SPECIAL ISSUE STRUCTURE: the special issue will consist of two invited papers and 7-8 best papers from an open call selected on a competitive basis. The invited papers will come from distinguished researchers in the field. The open call targets the wide research community.

SUBMISSION PROCEDURE: Prospective contributors are invited to submit manuscripts in PDF format only. Papers should be sent electronically using online manuscript submission at <http://ees.elsevier.com/image>. Authors should indicate that their submission is intended for this special issue (on visual search and augmented reality) in the remarks field.

SPECIAL ISSUE TIMELINE

- Manuscript Submission Deadline: May 31, 2011
- Preliminary review results: July 31, 2011
- Revised Manuscript Due : September 15, 2011
- Expected Publication Date: November 2011

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