Mobile Visual Search Applications
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Abstract - In this paper, we implemented to MVS applications such as street searching service for navigation and visual searching service for something. When people are searching for somewhere or something, visual searching service is to let us know information what it is. The visual searching service is simple and an effective way to search and retrieval information and can help us search and find out something more intuitively.

Keywords: MVS, visual descriptor, retrieval information, street searching service, Visual Searching Service

1 Introduction

Developing mobile devices, it provides a convenience for user to easily search and retrieval information among huge of data has been getting an attention. But, a user wants to classify it, how to describe its contents in words which could be searched for. In current text-based search, we can obtain right information only if we know the exact name or related keywords. Otherwise, information can be accessed by image searching method of taking a picture. Image searching method is simple and an effective way to search and retrieval information. The MVS (Mobile Visual Search) technology is extracted the visual descriptor of the query image in mobile device and retrieved descriptor in database. For MVS, there are the following requirements [1]:

- Robust visual descriptor: the visual descriptor is robust against different lightening conditions and partial occlusion by other object.
- Reliable reference DB: the reference image are easily generated and updated to the DB
- Efficient searching structure: for piratical service with a large-scale reference DB, the efficient search structure is essential.

Recently, the MVS based service is launched as follows: In the Goggles of Google, Google+ supports visual similarity search, local search, product catalog has expanded service area [3]. Amazon was acquiring ‘Snap Tell’ for image visual search and developed own online shopping service. The shape and color based searching service is launched such as product search app 'Flow' and shoes search app 'Fabulous' [4]. Qualcomm also was acquiring ‘kooaba’ for image recognition and launched such as MVS API based cloud recognition service ‘Vufloria’ [5]. Most existing MVS based searching services consist of three steps. In the first step, a user takes a picture of something to know information such as what it is, or where to buy, and the query image is send to the server. In the second step, a search engine retrieves the related image among the reference DBs. Finally, a user receives the information from the searching engine.

In this paper, we implemented to MVS applications of several situations such as outdoor, in the living room, and something curious object. In outdoor, street searching service is to let us know how to get somewhere. When a user watches a TV or finds something, visual searching service is to let us know information what it is.

Fig. 1. Street Searching Service for Navigation.

2 Applications

2.1 Street Searching Service for Navigation

When people are searching for somewhere or getting directions, we usually use a map or a map app based the GPS like Google map. The location based service is to let us know how to get somewhere using GPS to estimate the geographical position. But, it has some errors caused by a lot of things such as structural factors and the geometric errors.

In this paper, we implemented to MVS applications for street searching service. The people usually use a crossroad...
sign, corner building or landmarks for searching. So, the buildings around crossroads are more appropriate for the image based localization. Our service scenario starts from crossroads as shown in Fig. 1. As the first step, a user takes a photo of the buildings around the crossroads. The query photo is transmitted to the searching server. In the second step, the user receives the location and he or she is asked to determine which direction is to be navigated. In the third step, the user looks around the selected direction with traditional map and multi-perspective panoramic street views. It can help us search and find out somewhere more intuitively.

2.2 Visual Searching Service for Something

When a user watches a TV or video in the living room, it wants to know something what it is such as cleaner with brand name and how to use. But, the content let us does not know what it is because of PPL (Product Placement). Usually, we can obtain right information only if we know the exact name or related keywords. Otherwise, information can be accessed by MVS of taking a picture using Leap motion device. The visual searching service is simple and an effective way to search and retrieval information as shown in Fig. 2. It can help us search and find out something more intuitively.

Another situation, when a user finds a something what it is such as cosmetics and how to use. Especially, a man does not know what it is because of too complication. The visual searching service is simple and an effective way to search and retrieval information as shown in Fig. 3. It can help us search and find out something more intuitively.

Increasing a user demand for searching of deformable object such as clothing, shoes, bag and so on, it will be examined by various deformable object and environmental conditions for more practical applications.

Fig. 2. Visual Searching Service for Something using Leap motion device

Fig. 3. Visual Searching Service for Something

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3 References


