Geotagging Images with Improved Street View Database Matching

Mobile photo-sharing has become a powerful tool in many applications and has great potential for geotagging location apps. Ideally, an uploaded image of a user’s location should be identifiable using street view image database matching. However, current image-based searches are often unable to accurately match the current location image to the database, even after several attempts. This technology provides a self-correcting geotagging tool that increases the likelihood of image location identification after an initial search failure.

Improved Street View Image Matching with Suggested User Camera Angle

Visual location searches often fail when a location image is taken at an angle that is not coincident to those in the image database. Subsequent search results also usually fail and instead return results similar to the initial incorrect match. This technology recognizes that a preferred image orientation is required for successful location recognition and geotagging. The technology uses a first image input as a reference to narrow the street view database and recommends a preferred camera angle orientation for a subsequent image query. The resulting preferred image orientation has an increased likelihood of being accurately matched to its corresponding location based on the image database.

A prototype of the technology has been tested in New York City using Google Street View image database and been shown to improve achieve 88% success in secondary queries.

Lead Inventor:
Shih-Fu Chang, Ph.D.

Applications:
- Mobile photo-sharing location apps
- Image geotagging
- Object search systems
Advantages:

- Utilizes initial failed query to improve subsequent image search results

Patent information:

Patent Pending (WO/2012/145273)

Tech Ventures Reference: IR M11-094

Related Publications:


Inventors

Shih-fu Chang