

## Image Features Comparison-Based Position Estimation Method Using a Camera Sensor

**Authors :** Jinseon Song, Yongwan Park

**Abstract :** In this paper, propose method that can user's position that based on database is built from single camera. Previous positioning calculate distance by arrival-time of signal like GPS (Global Positioning System), RF(Radio Frequency). However, these previous method have weakness because these have large error range according to signal interference. Method for solution estimate position by camera sensor. But, signal camera is difficult to obtain relative position data and stereo camera is difficult to provide real-time position data because of a lot of image data, too. First of all, in this research we build image database at space that able to provide positioning service with single camera. Next, we judge similarity through image matching of database image and transmission image from user. Finally, we decide position of user through position of most similar database image. For verification of propose method, we experiment at real-environment like indoor and outdoor. Propose method is wide positioning range and this method can verify not only position of user but also direction.

**Keywords :** positioning, distance, camera, features, SURF(Speed-Up Robust Features), database, estimation

**Conference Title :** ICVAS 2014 : International Conference on Vehicle Autonomous Systems

**Conference Location :** Vancouver, Canada

**Conference Dates :** August 07-08, 2014