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A novel positioning technique for context awareness (Conference Paper)

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Abstract

View references (11)

Location detection is necessary for context awareness. Accurate user position coordinates as well as what that coordinate represents in terms of location landmarks are essential for understanding the possible context of the user. For this purpose a huge database of locations and venues with location coordinates is needed. We propose the use of location data gathered by the means of crowd sourcing. The said data is based on the public location database provided by Foursquare service. The database contains huge records of locations data for venues and landmarks worldwide. In this paper we show how the said database could provide accurate representations for locations coordinates that is query to it. We collected location parameters from various points around a certain area. Then using the custom made prototype that is based on a location based crowd sourcing API, we attempt to compare the results shown by the service with actual locations. Given the set of locations it is shown that it is possible to accurately detect 85% of these locations using the said crowd-sourced based location service given certain parameters. However, we detected that crowd sourced data do not provide a complete set of locations a secondary alternative is proposed. To supplement some of the shortcomings of these data we propose for our next step of research to create a customize database that is pre-populated with limited set of locations that are not available in the Foursquare database. © 2014 IEEE.

Author keywords

context awareness crowdsourcing location detection

Indexed keywords

Engineering controlled terms: Database systems Query processing

Context- awareness
Crowdsourcing
Location database
Location detection
Location parameters
Location services
Position coordinates
Positioning techniques