Design and Development of Framework for Identifying Errors in Crowdsourced Map Data

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Abstract

The development in the quantity of clients and the volume of data in OpenStreetMap (OSM) show the success of Volunteered geographical information (VGI) based task in attracting different types individuals from everywhere throughout the world. A huge quantity of data is produced every day by non-proficient clients and OSM faces the test of guaranteeing information quality. Since contributors have diverse perspectives about items, information integration in OSM might be considered as a type of multi-representation information combination. As due to freely availability of crowdsourced data quantity and quality assurance are two major areas to concern. This work introduces the design and development of a framework for identifying errors in crowdsourced map data, which enables volunteers to edit and tag geospatial and geographic data. Completeness, a quality parameter is used to investigate different types of errors. Initially Web-based framework is established, which includes a set of components to display the geospatial map data, indicators, markers to highlight or identify errors, as the establishment of the labeling framework. Based on this
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approach a prototype is developed and implemented in experiments. To actually fix the errors on OpenStreetMap, after completing the fix, it is sent back to OpenStreetMap. The result of this approach is to calculate the fixed errors by volunteers and graphically represent the stats of user contributions towards OpenStreetMap.

References


Index Terms

Computer Science  Security

Keywords

OpenStreetMap, Volunteered Geographical Information, Crowdsourcing, Tags