User Privacy Issues in VGI

Guillaume Touya

COST IC1203 7th MC Meeting – September 8th 2016
Activity area for OSM contributor

[Neis & Zipf 2012]
Map of Swarm/Foursquare check-ins
How much does VGI analysis invade user privacy?
Pascal Neis’ map of OSM contributors
One OSM user contributions
One OSM user week contributions
How did you contribute to OpenStreetMap?

Name: danito
Mapper since: May 22nd, 2011
Project days: 1922
Active mapping days: 1 (0.1%)
GPS-tracks: 0
Changesets: 1
Map changes: 1
Type? Hit-and-Run (Rarely Active)
Recent activities in No activity
Changeset discussions: Participated in 0 and created 0 comments
OSM Notes: Closed 0, commented 0 and 0 opened

<table>
<thead>
<tr>
<th>Name: danito (UID 458691)</th>
<th>Nodes</th>
<th>Ways</th>
<th>Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Created:</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Modified:</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Deleted:</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Changesets With comments</th>
<th>Unique comments</th>
<th>Median length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 (0.0%)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Amount of map changes
- <15 changes: 1 changesets
- >15 <150 changes: 0 changesets
- >150 changes: 0 changesets

Pascal Neis’ OSM contributor analyser
A user activity analysed by MVP OSM

[Napolitano & Mooney 2012]
When VGI quality improves, does user privacy decrease?
Foursquare venues and OSM data
Zoomed extracted with both building layers
Does a better VGI quality enables linking users in different sources?
OSM activity area vs Swarm check-ins: same user?
Research Agenda

• VGI data quality

• User privacy: Better understand the contribution patterns

• Spatial anonymization: how to protect user privacy without damaging too much data quality?

• Who is supposed to guarantee user privacy with VGI?
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Any question?

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