Task Specialization in Social Production Communities: The Case of Geographic Volunteer Work

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specialization

Von Krogh et al (2003) constructed the term “specialization” in the context of open source software – whether you contributed to the same module or different ones over time.

Turner et al (2005) and Welser et al (2007) identified roles in Usenet and online discussion groups: “question person” and “answer person”.

Welser et al (2008) studied roles in Wikipedia: technical editors, substantive experts, vandal fighters, etc.
Find bike routes that match the way you ride.

Share your cycling knowledge with the community.

personalized bikeability

Cyclopath lets you enter personal bikeability ratings for roads and trails. This unique rating system helps find the best routes for you, while also supporting the community with your individual knowledge.

geowiki what?

Cyclopath is a geowiki: an editable map where you can explore and share your knowledge.

new features

Regions
Share information about and route to neighborhoods and other area-based places.

Multiple routes
Cyclopath can now show multiple routes at once, letting you efficiently compare different possibilities.

Cyclopath discover your path

200 union st se

lagoon

Cyclopath is available in the 7-county Twin Cities metro area.

Find Route
Cyclopath route finding

Route Details
From: 200 Union St SE, Minneapolis, MN 55455
To: Landmark Lagoon Cinema (Lowry Hill East,...
Length: 5.19 mi
Share: Create Link

Color route by:
- Major Road
- Byway Type
- Bicycle Path

Cue Sheet

<table>
<thead>
<tr>
<th>Odo.</th>
<th>Directions</th>
<th>Leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>Start cyclino N on Union St SE</td>
<td>0.01</td>
</tr>
<tr>
<td>0.01</td>
<td>Left/W onto Scholars Walk</td>
<td>0.24</td>
</tr>
<tr>
<td>0.25</td>
<td>Left/S onto East Bank Deck Bridge</td>
<td>0.06</td>
</tr>
<tr>
<td>0.31</td>
<td>East Bank Deck Bridge changes to</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>East Bank Deck</td>
<td></td>
</tr>
<tr>
<td>0.37</td>
<td>Slight right/SW onto Washington</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>Ave Bridge - Upper deck</td>
<td></td>
</tr>
<tr>
<td>0.63</td>
<td>Left/S onto U of M West Bank</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Sidewalk</td>
<td></td>
</tr>
<tr>
<td>0.73</td>
<td>U of M West Bank Sidewalk</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>changes to U of M West Bank</td>
<td></td>
</tr>
<tr>
<td>0.83</td>
<td>Right/W onto 4th St S</td>
<td>0.05</td>
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<tr>
<td>0.88</td>
<td>Left/S onto 20th Ave S</td>
<td>0.46</td>
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<tr>
<td>1.34</td>
<td>20th Ave S changes to Cedar Ave S</td>
<td>0.09</td>
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<tr>
<td></td>
<td>/ County Hwy 152</td>
<td></td>
</tr>
<tr>
<td>1.43</td>
<td>Right/W onto Parking Lot</td>
<td>0.07</td>
</tr>
<tr>
<td>1.50</td>
<td>Sharp left/SE onto Hiawatha LRT</td>
<td>0.64</td>
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</tbody>
</table>

Map Key
editing tools

edit map directly!
edit map directly!
save changes
work type
research questions

are contributions specialized?

are contributors specialized?

how does this specialization change?
specialization in contributions

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chromogram stacks
(exploratory visualization)

1

User A:
- one dot per revision
- color indicates specialization

2

User A:
chromogram stack: both
(exploratory visualization)

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how do we measure specialization?

<table>
<thead>
<tr>
<th></th>
<th>block</th>
<th>point</th>
<th>note</th>
<th>tag</th>
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<tbody>
<tr>
<td></td>
<td>60%</td>
<td>25%</td>
<td>8%</td>
<td>7%</td>
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an example user’s contributions
specialists

<table>
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<tr>
<th>Work type</th>
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<th>Mean Revisions</th>
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<tr>
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<td>25</td>
</tr>
<tr>
<td>Tag</td>
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<td>37</td>
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<tr>
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<td>29</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
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</table>
change in specialization
(population level)

- Block
- Point
- Note
- Tag
- None

Percentage of users

Anon
15

After n rews (num. of users above bars)

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change in specialization
(individual level)

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<th>Points</th>
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</tr>
<tr>
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<td>4</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Notes</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Tags</td>
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<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
change in individual specialization

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so we’ve found that

there exist specialists by work type.

block specialization is the most popular.

experienced users all specialize in blocks.

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design implications

modal interfaces

composition of work units

intelligent task routing

neighborhood campaigns

intelligent recruiting

community awareness

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future work

qualitative studies

cultivation of specialization

place attachment

masli@cs.umn.edu, @cyclopath_hq
thank you!

also, Cyclopath team, GroupLens Research, Cyclopath users, NSF, my family and my friends.

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