TourWithMe

 Recommending peers to visit attractions together

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Tourists

Tourism > Visiting a New City > Planification
Tourists

Tourism > Visiting a New City > POI RecSys
Tourists

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Tourists

Tourism > Visiting a New City > Group RecSys
Open Issues

Inferring user interests
- Manually provided by the user.
- Inferred from check-ins or geotagged content.

Tourists travelling alone must manually look for companions
- Facebook groups.
- Specialized websites.
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Tourism > Proposed Approach

1. Inferring user interests from data collected by mobile phone.
2. Recommending groups for tourism according to user interests.
3. Recommending a POI to the generated group of users.
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Tourism > Proposed Approach > Inferring User Interests
Tourism > Proposed Approach > Inferring User Interests

User's history of visits:

- POI #1: t0 → t1
- POI #2: t2 → t3
- POI #3: t4 → t5

Inferring interests:
Tourism > Proposed Approach > Inferring User Interests
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Tourism > Proposed Approach > Inferring User Interests

\[
\text{Interest}_{\text{travel-time}} = \frac{\text{Travel Time}}{\text{Travel Time} + \text{Visit Duration}}
\]
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Tourism > Proposed Approach > Inferring User Interests

\[
\text{Interest}_{\text{travel-time}} = \frac{\text{Travel Time}}{\text{Travel Time} + \text{Visit Duration}}
\]

\[
\text{int}_{\text{inferred}}(U, C) = \frac{\sum_{p \in C} \text{interest}(U, p)}{|C|}
\]
I want to tour with two more people

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Tourism > Proposed Approach > Recommending Groups
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Tourism > Proposed Approach > Recommending Groups

Diagram showing relationships and scores between individuals.
Tourism > Proposed Approach > Recommending POI

<table>
<thead>
<tr>
<th>Categories</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
</tr>
</thead>
<tbody>
<tr>
<td>User 1</td>
<td>0.81</td>
<td>0.83</td>
<td>0.65</td>
</tr>
<tr>
<td>User 2</td>
<td>0.55</td>
<td>-</td>
<td>0.66</td>
</tr>
<tr>
<td>User 3</td>
<td>0.65</td>
<td>0.91</td>
<td>0.64</td>
</tr>
<tr>
<td>Group</td>
<td>0.67</td>
<td>0.87</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Average Aggregation
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Tourism > Proposed Approach > Recommending POI

\[
int(g, p) = \frac{\sum_{c \in C_p} int(g, c)}{|C_p|}
\]

#1 0.78
#2 0.73
#3 0.62
#4 0.58
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Tourism > Proposed Approach > Recommending POI

\[ int(g, p) = \frac{\sum_{c \in C_p} int(g, c)}{|C_p|} \]

#1: Sun, 0.78, 4hs
#2: Tree, 0.73, 2hs
#3: Opera House, 0.62, 2hs
#4: Person, 0.58, 30min
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Tourism > Proposed Approach > Recommending POI

\[ int(g, p) = \frac{\sum_{c \in C_p} int(g, c)}{|C_p|} \]

<table>
<thead>
<tr>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>☀️</td>
<td>🌳</td>
<td>🏷️</td>
<td>⬆️</td>
</tr>
<tr>
<td>0.78</td>
<td>0.73</td>
<td>0.62</td>
<td>0.58</td>
</tr>
<tr>
<td>4hs</td>
<td>2hs</td>
<td>2hs</td>
<td>30min</td>
</tr>
</tbody>
</table>

Number of visitors vs. Visit duration (minutes)
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Tourism > Current State and Future Directions

1. Finish development
2. Evaluate the approach
3. Adjust parameters
Gracias