Travel Route Recommendation

Diploma Thesis

Lecturer: Prof. Dr. Andreas Butz
Supervisor: Yaxi Chen
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Motivation

• Limited knowledge of the city, but many different information sources

• Much effort for travellers to select and organize the preferred activities

• No overview provided to view different sights and their locations, no personal recommendations

• Route suggestions do not consider opening times
Topic of the Thesis

• Online application that helps travellers to plan their city trips

• Combine information from different sources in one single application

• Recommend the user certain activities based on his own personal preferences

• Support the user in constructing routes for each day of the trip
Overview

• Related Work
• Expert Interview
• Online Survey
• Application Design
• Interaction Design
• Workflow
• Outlook
Related Work

• Carolis (2007): *MyMap - Generating personalized tourist descriptions*
  
  • Mobile application
  
  • Recommendations based on user preferences and the user’s current context
  
  • UI: map containing icons for objects of interest, list of all objects displayed on the map, detailed description of selected object
Related Work

• Sebastia (2008): e-Tourism - a tourist recommendation and planning application
  • Recommendation of sights and attractions according to the user’s preferences
  • Let the user choose the sights he wants to visit
  • System constructs a tour plan telling the user when to perform which activities
  • No route provided, only time schedule for single activities

Sebastia (2008)
Expert Interview

• Interview with an employee of the travel agency „Singer Reisen“

• Identification of different customer categories and different motivations to travel

• Important factors for city travellers: opening times, photos, map, so called „Must Haves“ of a city

• Non-important factors for city travellers: weather, exact routes for each day
Online Survey

- Participants: 100
- Age: 21-65 (average age: 27)
- Gender: 46% male, 54% female
- Travel frequency: 3 times a year
- Planning duration: 5 days (40% on planning sights to visit)
Online Survey

- Planning before the trip: hotel, sights to visit
- Influence factors: recommendations from others, popularity
- Recommendation based on: personal interests, typical things for the city
Online Survey

- User acceptance of filling out a short profile form

- UI visualization: display with map vs. display with list

- Route importance: very important, especially for female users

- Route visualization: display in a map with both sights and exact route
Main Sources

- **Yahoo Travel**
  ([www.travel.yahoo.com](http://www.travel.yahoo.com))
  - Title, address, description
  - Opening hours, user rating, popularity

- **Google Maps**
  ([www.maps.google.com](http://www.maps.google.com))
  - Address, coordinates
  - Distance, duration
Sight Recommendation

• User preferences
  • Input form where the user has to rate different sight categories
  • Search for items according to the users preferences (content-based filtering)

• History data (optional)
  • Assume user preferences from history data, search for similar users (collaborative filtering)

Route Recommendation

• **Problem 1: Route Finding Algorithm**
  - System has to consider walking distances and opening times

• **Problem 2: User Interaction**
  - No reasonable way for the user to interact with the finished routes

• **Solution: Route Construction Support**
  - System suggests sights regarding the current time
  - User selects sights on his own
  - Route is constructed step by step
Interaction Design – Step 1

Time: 9 am
Interaction Design – Step 2

Time: 9.30 am
Interaction Design – Step 3

Time: 10.40 am
Interaction Design – Step 4

Time: 11.55 am
Workflow

• User Input: user data, user preferences, search query, selection of items

• System Output: recommendation of sights, proposal for adequate items, finished travel routes
Outlook

• Analysis of Existing Travel Systems and Guidebooks
• Research on Related Work
• Expert Interview
• Online Survey
• Workflow and Design of System

• Implementation and Design
• User Study
• Formulation of the Thesis
Thank you for your attention!