

Intelligent Mobile Tourist Guide: Tourist Assistant - TAIS

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Abstract—Tourist Assistant - TAIS (Tourist Attraction Information Service) is a mobile tourist guide developed for Android-based devices. It provides tourists with recommendations on what attraction (e.g., museum, monument, social place) are currently better to visit, based on the tourist's preferences and current situation in the region (e.g., closed attractions, weather situation, accessible drivers around the tourist who can drive him/her to places of interest). The service is based on Smart-M3 information sharing platform that provides the smart space infrastructure. Recommendation methods, algorithms, and scenarios have been successfully developed, prototyped.

Tourist Assistant - TAIS provides possibilities for tourists browsing attractions descriptions and photos, estimating attractions and related images to improve recommendation performance. For information sources the following resources are used at the moment: Wikipedia, Wikivoyage, Panoramio. Moreover, the service can display current user location on the map, provide possibilities to build pedestrian and car paths to the interested attraction, find fellow travelers who can pick tourist up around location and drop off around interested attraction. Current weather in the tourist location is displayed for the tourist in mobile device and used for making recommendations for the tourist (e.g. in rainy weather outdoor attractions less preferred than indoor).

Mobile tourist guide consists of several services that solving particular tasks and interact in smart space that allows to provide interoperability support between them. There are attraction information service, recommendation service, administration service, context service and mobile client.

Attraction information service extracts the information about attractions from different Internet sources and shares it with the smart space. Recommendation service takes the lists of shared attractions, their images and descriptions and range this lists according the tourist preferences and context situation in the considered area shared with the smart space by context service. It uses for automated filtering and ranking two approaches: content analysis and user evaluation. Administration service allows to setup the following parameters for the mobile tourist guide operation: attractions searching radius, recommended attractions count, smart space waiting time, new default items count, images searching radius for main page, GPS inquire timeout, and changing location for GPS inquire. Using the mobile client for accessing to the mobile tourist guide allows the tourist to see recommendation about attractions in the region during the trip and rate the attractions, photos and their descriptions.

In the Fig. 1 the architecture of mobile tourist guide is presented. Mobile client shares with the smart space the tourist context information like coordinates and his/her preferences. Attraction Information Service acquires from different Internet sources attraction information (a list of attractions around the tourist, images and their descriptions). The recommendation service analyzes the attraction information and tourist preferences estimations and provides recommendations for the tourist. Mobile client shows these recommendations for the tourist. Administration Service allows to set special settings, which allows to tune mobile tourist guide with balance between quickness and recommendations quality. Context Service provides weather information in the region around the tourist.

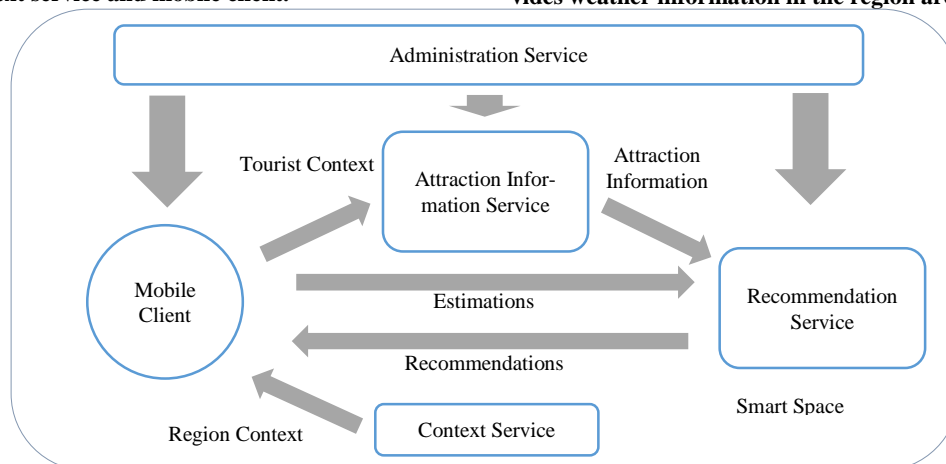


Fig. 1. General Architecture of Mobile Tourist Guide