Contribution ID: **110** Type: **not specified**

Dynamic Personalization of Tourist Experiences through Data Analytics

Tourism stakeholders increasingly seek data-driven methods for tailoring travel experiences to individual interests. This study investigates whether the preferences that travelers express implicitly on social media, together with operational travel data, can be transformed into high-fidelity digital profiles and, subsequently, into personalized travel packages.

During the first phase, we will assemble and analyze a rich, multi-source dataset encompassing airline schedules, historical fare dynamics, point-of-interest (POI) metadata—including categories such as buildings, museums and squares—and user-generated content (e.g. social-media posts, geotagged check-ins, reviews). Statistical analysis forms the critical foundation: exploratory techniques (descriptive statistics, visualization) and inferential methods (correlation analysis, factor analysis, time-series decomposition) will uncover baseline patterns such as seasonal price fluctuations, route-popularity trends, POI co-visitation clusters (e.g. correlations between museum visits and nearby square activity) and other factors influencing user choices.

In subsequent phases, machine-learning techniques—particularly clustering algorithms—will synthesize the analyzed data to extract latent user preferences and construct probabilistic preference profiles.

By integrating robust statistical analysis of diverse tourism data with machine learning and heuristic optimization, the study aims to advance intelligent tourism systems and create travel experiences that are more relevant, cost-effective and user-centric.

Special/ Invited session

Classification

Mainly application

Keywords

dynamic personalization, intelligent tourism systems, personalized travel packages

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Track Classification: Statistics in Tourism