RecTour 2022

Workshop on Recommenders in Tourism

Seattle, WA, USA and Virtual, September 22nd, 2022

Proceedings

Edited by

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Julia Neidhardt, Wolfgang Wörndl, Tsvi Kuflik, Dmitri Goldenberg & Markus Zanker (editors).

Further information about the workshop can be found at: https://web.ec.tuwien.ac.at/rectour22/

Preface

This volume contains the contributions of the Workshop on Recommenders in Tourism (RecTour), organized in conjunction with the 16th ACM Conference on Recommender System (RecSys 2022) in Seattle, WA, USA.

RecTour 2022 focuses on a variety of challenges specific to recommender systems in the tourism domain. This domain offers considerably more complicated scenarios than matching travelers with the presumably best items. Planning a vacation usually involves searching for interconnected and dependent product bundles, such as means of transportation, accommodations, attractions, and activities, with limited availabilities and contextual aspects (e.g., spatio-temporal context, social context, activity sequence, and environment) having a major impact. In addition, travel related products can be considered as emotionally loaded and are thus largely experiential in nature; therefore, decision taking is often not solely based on rational or objective criteria. Therefore, information provisioning at the right time about destinations, accommodations and various further services and possible activities is challenging. Additionally, and in contrast to many other recommendation domains, information providers are usually small and medium sized enterprises (SMEs) that many times do not possess the capacity to implement basic recommender systems. Moreover, there is no single, standard format to house information which might be included in these systems. Last, much of the tourism experience is co-produced, i.e., it occurs during the consumption of the product and interaction with the provider. Therefore, the context of the recommendation is extremely important. Thus, given this diversity, building effective recommender systems within the tourism domain is extremely challenging. The rapid development of information and communication technologies (ICT) in general and the web in particular has transformed the tour- ism domain whereby most travelers rely little on travel agents or agencies. Indeed, recent studies indicate that travelers now actively search for information using ICT in order to compose their vacation packages according to their specific emotionally driven preferences. Additionally, when on-site, they search for freely available information about the site itself rather than renting a visitor guide that may be available, but considered to be expensive and sometimes outdated. However, like in many other cases, the blessing of the web comes with a curse; the curse of information overload. As such, recommender systems have been suggested as a practical tool for overcoming this information overload. However, those designing tourism-focused recommender systems face huge challenges as the tourism domain is extremely complex.

This workshop brings together researchers and practitioners from different fields (e.g., tourism, recommender systems, user modeling, mobile technologies, artificial intelligence and web information systems) working in the tourism recommendation domain. The workshop aims to provide a forum for these people to discuss novel ideas with the goal to advance the current state-of-the-art in this field. Another goal of the workshop is to identify practical applications of these technologies within tourism settings from the point of view of individual users and user groups, service providers, as well as from additional stakeholders (e.g., destination management organizations). RecTour 2022 aims to continue the community building processes and discussions started at previous RecTour Workshops. Topics at RecTour 2022 particularly deal with recommending destinations, itinerary recommendation online hotel search and novel perspectives on personalization.

September 2022 Julia Neidhardt, Wolfgang Wörndl, Tsvi Kuflik Dmitri Goldenberg & Markus Zanker

Workshop Committees

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- **Tsvi Kuflik**, Information Systems Department, The University of Haifa, Israel
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- **Gabriele Sottocornola**, Free University of Bozen/Bolzano, Italy

Acknowledgement

Workshop Program

9 AM - 12:30 PM (PDT) On-Site Session

- **Workshop Opening**
- **Keynote by Robin Burke**
- **Emanuele Cavenaghi, Lorenzo Camaione, Paolo Minasi, Gabriele Sottocornola, Fabio Stella and Markus Zanker:** An Online Experiment of a Price-Based Re-Rank Algorithm
- **Short Break**
- **Abhishek Agarwal and Linus W. Dietz:** Recommending the Duration of Stay in Personalized Travel Recommender Systems
- **Evripides Christodoulou, Andreas Gregoriades, Herodotos Herodotou and Maria Pampaka:** Combination of User and Venue Personality with Topic Modelling in Restaurant Recommender Systems
- **Chana Ross, Tomer Ovadia, Jake Mooney, Amit Meitin, Eytan Kabilou, Mush Kabalo and Dmitri Goldenberg**: Democratizing Travel Personalization via Central Recommendation Platform
- **Wrap-Up and Discussion**

2:30 PM - 4 PM (PDT) Virtual Session

- **Costas Panagiotakis, Evangelia Daskalaki, Harris Papadakis and Paraskevi Fragopoulou:** The Tourist Trip Design Problem with POI Categories via an Expectation-Maximization Based Method
- **Errikos Streviniotis and Georgios Chalkiadakis:** Multiwinner Election Mechanisms for Diverse Personalized Bayesian Recommendations for the Tourism Domain
- **Keisuke Otaki and Yukino Baba:** Maximal Likelihood Itinerary Planning with User Interaction Data
- **Final Wrap-Up and Workshop Closing**

Tourism Recommendation: Re-Thinking the User

Keynote by Robin Burke (University of Colorado, Boulder, USA)

Abstract

From its inception, research in recommender systems has focused almost exclusively on the individual end user or users to whom recommendations are delivered. The limits of this approach have become apparent as the field moves towards a greater recognition of the perspectives of multiple stakeholders. The incorporation of the multiple viewpoints in recommender systems presents a challenge to our understanding of the "user" of a recommender system and to accepted notions of how recommender systems should be designed, operated and evaluated. In tourism, we see a diversity of non-end-user stakeholders from individual entrepreneurs and large corporations to non-profits and governmental entities, and a range of types of concerns from profit to fairness to ecological impact. What would recommender systems research look like if we considered these stakeholders to be first-class users of our systems and not just bystanders? In this talk, we'll look at the challenges and benefits of such an approach for the tourism domain.

About the speaker

Robin Burke is Professor and Chair of the Department of Information Science at the University of Colorado, Boulder. He conducts research in personalized recommender systems, a field he helped found and develop. His most recent projects explore fairness, accountability and transparency in recommendation through the integration of objectives from diverse stakeholders. He joined the Department of Information Science in 2019 from the School of Computing at DePaul University. Dr Burke obtained his PhD in Computer Science from Northwestern University in 1993 and a BS in Computer Science from Harvey Mudd College in 1986. Professor Burke is the author of more than 100 peer-reviewed articles in various areas of artificial intelligence including recommender systems, machine learning and information retrieval. His work has received support from the National Science Foundation, the National Endowment for the Humanities, the Fulbright Commission and the MacArthur Foundation, among others.

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