13th International Workshop on Personalized Access to Cultural Heritage (PATCH 2022)-Towards Hybrid CH Experience

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13th International Workshop on Personalized Access to Cultural Heritage (PATCH 2022) - Towards Hybrid CH Experience

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ACM PATCH 2022, the 13th International Workshop on Personalized Access to Cultural Heritage, is organized in conjunction with the 30th International Conference on User Modeling, Adaptation and Personalization. It is the meeting point between researchers and practitioners working on personalization in cultural heritage, aiming to enhance the user experience in digital and physical Cultural Heritage sites. The PATCH workshops started in 2007 and they are typically held in conjunction with UMAP, IUI and recently AVI Conference series. This paper summarizes the main ideas addressed in the papers accepted for presentation at PATCH 2022 and for publication in the workshop proceedings.

1 INTRODUCTION

Following the successful series of PATCH workshops, PATCH 2022 will be again the meeting point between state-of-the-art research and practice of personalization in cultural heritage (CH) — using any kind of technology, while focusing on ubiquitous and adaptive scenarios, to enhance the personal experience in CH sites. This year, the workshop focuses specifically on the impact of COVID-19 on CH — the introduction of virtual and hybrid visits to CH sites. The workshop aims at bringing together, physically and/or virtually, researchers and practitioners who are working on various aspects of CH and are interested in exploring the potential of state-of-the-art mobile technology (onsite as well as online) to enhance the CH visit experience. This paper motivates the organization of the workshop and presents an overview of the main ideas emerging from the papers accepted for presentation at the event and for publication in the workshop proceedings.

2 MOTIVATION

CH has traditionally been a preferred area for personalization research, as highlighted by the many publications focusing on it over the years and specifically the H2020 calls on this topic. Visitors come to CH sites willing to experience and learn new things, usually without a clear idea of what to expect. CH sites are typically rich in objects and information; much more than the visitor can absorb during the limited time of a visit. Visitors to CH sites differ and their visit experience involves a combination of the physical, the personal, the socio-cultural context, and identity-related aspects [3]. Hence, they may benefit from individualized support that considers contextual and personal attributes.

However, personalization brings two main challenges. Firstly, can we support CH exploration for first-time and anonymous visitors, considering that many people access CH sites only once, or they interact with digital services anonymously? Secondly, when it is possible to track users across time, can we provide an engaging experience for the 'digital', 'mobile' and 'traditional' CH visitors before, during, and after a visit by exploiting information from previous interactions on CH sites and elsewhere on the ubiquitous Web? Furthermore, an interesting problem is to explore whether this kind of support can be a basis for maintaining a lifelong chain of personalized CH experiences. This is true, not only in "traditional" CH sites, but also in urban environments, which reflect the varied history of mankind and offer places and objects representing shared values for the population, to be preserved and valued.

Various recommendation techniques can be applied to face these challenges. For instance, mining general user behavior can help the development of session-based personalization techniques which can be applied to first-time visitors. Moreover, the evolution and convergence of technologies for managing and integrating open and linked data, and for delivering mobile services, open new opportunities for personalization research, which has the potential to improve the presentation of information, the exploration of content and the discovery of events interesting for the specific user/group, the collaboration among users having similar interests, as well as the adaptation to heterogeneous user contexts and devices.

Personalization can also be related to collaboration in the preservation, enrichment, and access to CH by considering crowdsourcing techniques, based on active involvement of a broad range of people to enhance the management of CH information. Several projects developed data collection tools, museum or city visitor guides as a means of demonstrating various concepts including location and context awareness and smart building environments. Together, these represent two ends of the "production" process of bringing cultural and natural heritage from the research environment to its consumers.

A key ingredient is also to address many classes of ambience: touristic routes, cities, archaeological sites, ancient buildings and museums, as well as spontaneous sources of artwork such as street art. We propose to address the issue of extending the users' perception level, their learning abilities or their productivity: the user is not only the information consumer but also the producer. For example, citizens can flag points of historical-artistic interest, their state of repair and any problems to provide tourists with promotional information and public administration bodies with monitoring information.

Currently, various initiatives already invite people to engage with their collections online (e.g., Tate Modern, Powerhouse Museum), or reach out via Social Web platforms, (e.g., Flickr the Commons, Brooklyn Museum on Facebook, augmented reality browser of Netherlands Architecture Institute with Layar). Other interesting trends of research propose the idea of a smart museum enriched by smart objects and IoT devices that may more precisely track the user experience and may propose new interaction experiences (e.g., enhanced with wearable devices) also in CH sites. Finally, given the COVID-19 pandemic that seems to be here to stay for the near future, we aim at addressing the

challenge of engaging remote visitors in online virtual and hybrid tours, as a way to experience CH in spite of the lockdowns and travelling restrictions.

The goal of the PATCH workshop is the investigation of all of these aspects in order to discover new synergies among researchers and practitioners, and identify and propose new enabling technologies than can bring CH fruition one step forward.

3 PATCH 2022 PROGRAM

Six papers were accepted for publication in the PATCH 2022 workshop proceedings and for presentation at the workshop. They cover a wide range of topics on personalized access to Cultural Heritage. A brief description of them follows:

- Ardissono et al. [1] present a visualization model that supports the map-based presentation of environmental data about geographical areas of CH interest. The model blends information about cultural and natural heritage information, and thus, proposes a direction toward personalized guides for green tourism.
- Bolioli et al. [2] present an approach that is based on emotion attribution and classification of CH assets through the use of artificial intelligence. The techniques presented are based on language and emotion extraction with classification being elaborated along with the Plutchik's theory "*wheel of emotions*".
- Ferrato et al. [4] present a museum itinerary recommender system that takes advantage of deep learning techniques to implicitly infer the visitors' appraisal and emotions while observing artworks and to implicitly acquire their position while ensuring their anonymity.
- Kadastik et al. [5] present the design, development, and evaluation of a semantic-based reasoning tool for CH. The tool aims at enhancing the diversity of perspectives of museum visitors, by associating museum assets with combined and related values and emotions.
- Mauro et al. [6] explore the interrelationships between semantic connections and narratives, and toward this goal, they present a mobile guide that allows users to thematically explore CH places through narratives and to connect narratives based on topics' similarity. The mobile guide supports both physical and virtual exploration of CH places.
- Mokatren et al. [7] present an automatic method for creating datasets to be used for image-based positioning in CH contexts. Through the proposed method, the operators that are not familiar with image-matching techniques are allowed to capture a set of images that will be used to create a dataset for points of interest.

We wish you a pleasant reading of the proceedings and we hope that they will be fruitful for your research activities.

4 ORGANIZATION

Workshop organizers

- Tsvi Kuflik (The University of Haifa, Israel);
- Noemi Mauro (University of Torino, Italy);
- George E. Raptis (Human Opsis, Greece);
- Alan Wecker (The University of Haifa, Israel).

Program Committee

- Angeliki Antoniou (University of West Attica, Greece);
- George Caridakis (University of the Aegean, Greece);

- Keith Cheverst (Lancaster University, UK);
- Susan Hazan (Israel Museum, Israel);
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- Joel Lanir (The University of Haifa, Israel);
- Vincenzo Lombardo (University of Torino, Italy);
- Moayad Mokarten (The University of Haifa, Israel);
- Elena Not (FBK-irst, Italy);
- Giuseppe Sansonetti (Roma Tre University, Italy);
- Giovanni Semeraro (University of Bari, Italy);
- Maria Vayanou (University of Athens, Greece);

We thank Pierluigi Cassotti (University of Bari, Italy) for having contributed to PATCH 2022 as a reviewer.

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