# Proceedings of the Posters and Demos at the 23rd Conference on User Modelling, Adaptation and Personalisation (UMAP 2015)

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# Preface

The 23rd International Conference on User Modelling, Adaptation and Personalization (UMAP 2015) was held in Dublin, Ireland, between 29th of June and the 3rd of July, 2015. Poster and demonstration papers contain original and unpublished accounts of innovative research ideas, preliminary results, industry showcases, and system prototypes, addressing both the theory and practice of User Modelling, Adaptation and Personalization.

A total of 21 submissions were received. Similarly to the main tracks of the conference, each of them was reviewed by at least three members of the Program Committee. Submissions have been assessed based on their originality and novelty, potential contribution to the research field, potential impact in particular use cases, and the usefulness of presented experiences, as well as their overall readability.

For these proceedings, 11 papers (6 posters, 5 demos) were accepted based on this process, for presentation at the UMAP 2015 conference, on the 1st of July 2015.

## Posters:

- **Anthony Cruickshank, Subramanian Ramamoorthy and Richard Shillcock. Predicting actions using a probabilistic model of human decision behaviours**

**Abstract:** Computer interfaces provide many different optimal methods for completing tasks. However, though users have a large degree of freedom, typically they will settle on a smaller set of preferred solutions. Designing an interface agent to provide assistance in this environment thus requires not only knowledge of the objectively optimal solutions, but also recognition that users act from habit and that adaptation to an individual's subjectively optimal solutions is required. We present a dynamic Bayesian network model for predicting a user's actions by inferring whether a decision is being made by deliberation or through habit. The model adapts to individuals in a principled manner by incorporating observed actions using Bayesian probabilistic techniques. We demonstrate the model's effectiveness using specific implementations of deliberation and habitual decision making, that are simple enough to transparently expose the mechanisms of our estimation procedure. We show that this implementation achieves >90% prediction accuracy in a task with a large number of optimal solutions and a high degree of freedom in selecting actions.

- **Dario De Nart, Dante Degl'Innocenti and Carlo Tasso. Introducing Distiller: a Lightweight Framework for Knowledge Extraction and Filtering**

**Abstract:** Semantic content analysis is an activity that can greatly support a broad range of user modelling applications. Several automatic tools are available, however such systems usually provide little tuning possibilities and do not support integration with different systems. Personalization applications, on the other hand, are becoming increasingly multi-lingual and cross-domain. In this paper we present a novel framework for Knowledge Extraction, whose main goal is to support the development of new strategies and technologies and to ease the integration of the existing ones.

- **Aidan Jones, Susan Bull and Ginevra Castellano. Teacher Scaffolding of a Student's Self-regulated Learning using an Open Learner Model**

**Abstract:** This paper describes a study of a teacher's scaffolding to support reflection and self-regulated learning (SRL) with an open learner model (OLM) in a geography based task on a touch screen. The study was carried out in 6 one-on-one sessions with students between the ages of 10 and 11. We present examples of teachers scaffolding students' SRL behaviours using the OLM, demonstrating how an OLM can be used to prompt the learner to monitor their developing skills, set goals, and use appropriate tools.

- **Fahim A. Salim, Killian Levacher, Owen Conlan and Nick Campbell. Examining Multimodal Characteristics of Video to Understand User Engagement**

**Abstract:** Video content is being produced in ever increasing quantities and offers a potentially highly diverse source for personalizable content. A key characteristic of quality video content is the engaging experience it offers for end users. This paper explores how different characteristics of a video, e.g. face detection, paralinguistic features in the audio track, extracted from different modalities in the video can impact how users rate and thereby engage with the video. These characteristics can further be used to help segment videos in a personalized and contextually aware manner. Initial experimental results from the study presented in this paper provide encouraging results.

- **Cameron Summers and Phillip Popp. Large Scale Discovery of Seasonal Music From User Data**

**Abstract:** The consumption history of online media content such as music and video offers a rich source of data from which to mine information. Trends in this data are of particular interest because they reflect user preferences as well as associated cultural contexts that can be exploited in systems such as recommendation or search. This paper classifies songs as seasonal using a large, real-world dataset of user listening data. Results show strong performance of classification of Christmas music with Gaussian Mixture Models.

- **Robert Moro and Maria Bielikova. Utilizing Gaze Data in Learning: From Reading Patterns Detection to Personalization**

**Abstract:** Although a lot of attention has been dedicated towards improvement of the modeling of learners' knowledge within learning systems, recommendation, or personalization, there is less attention on improvement of the learning content itself and providing support to learning content creators. In addition, the complexity of learning systems requires utilization of novel sources of implicit feedback, such as gaze data in order to model learners' interactions in their entirety. In this poster paper, we present a framework for collection of gaze data and its utilization in the learning systems environment. We focus on the analysis of reading patterns for the detection of problematic parts of text and present results of a preliminary evaluation in a web-based learning system ALEF.

## Demos:

- **Cornelius A. Ludmann, Marco Grawunder and H.-Jürgen Appelrath. OdysseusRecSys: Collaborative Filtering based on a Data Stream Management System**

  **Abstract:** The development of algorithms for online Collaborative Filtering (CF) in the past few years enables to add new rating data to existing models. The Recommender System (RecSys) task changes from calculating recommendations from a static and finite dataset to continuously processing rating data. Instead of using stream processing frameworks to implement CF algorithms, we present a prototype that extends the open source Data Stream Management System (DSMS) Odysseus in a generic and domain-independent way. The user can build a custom RecSys that benefits from existing DSMS features by defining a continuous query with a declarative query language.

- **Panagiotis Germanakos, Marios Belk, Argyris Constantinides and George Samaras. The PersonaWeb System: Personalizing E-Commerce Environments based on Human Factors**

  **Abstract:** This demonstration paper presents the PersonaWeb system, an adaptive interactive system that personalizes the visual and interaction design aspects of E-Commerce product views based on individual differences in cognitive processing. The PersonaWeb system consists of three main components: i) the user modeling component in which explicit and implicit user data collection methods are performed for eliciting the users' cognitive processing factors; ii) the content management component for creating and managing structured Web content; and iii) the adaptive user interface that is responsible for performing rule-based mechanisms for deciding and communicating a personalized visual and interaction design according to the users' cognitive characteristics.

- **Guibing Guo, Jie Zhang, Zhu Sun and Neil Yorke-Smith. LibRec: A Java Library for Recommender Systems**

  **Abstract:** The large array of recommendation algorithms proposed over the years brings a challenge in reproducing and comparing their performance. This paper introduces an open-source Java library that implements a suite of state-of-the-art algorithms as well as a series of evaluation metrics. We empirically find that LibRec performs faster than other such libraries, while achieving competitive evaluative performance.

- **Alejandro Montes García, Natalia Stash and Paul De Bra. Adaptive applications to assist students with autism in succeeding in higher education**

  **Abstract:** This demo shows adaptation of presentation and information for students entering a university, especially for students with autism. These students not only have specific information need, they are also more concerned about their privacy. We use WiBAF (Within Browser Adaptation Framework) for user modeling and adaptation to give users control over the sharing of their data.

- **Khalil Muhammad, Aonghus Lawlor, Rachael Rafter and Barry Smyth. Generating Personalised and Opinionated Review Summaries**

  **Abstract:** This paper describes a novel approach for summarising user-generated reviews for the purpose of explaining recommendations. We demonstrate our approach using TripAdvisor reviews.

We thank all authors for submitting and presenting their works, and members of the Program Committee for providing their valuable time and expertise for reviewing and selecting the papers. All their efforts made UMAP 2015 poster and demo results possible.

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