Learning Object Analytics for Collections, Repositories & Federations

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ABSTRACT
A large number of curated digital collections containing learning resources of a various kind has emerged in the last year. These include referatories containing descriptions for resources in the Web (as MERLOT), aggregated collections (as Organic.Edunet), concrete initiatives as Khan Academy, repositories hosting and versioning modular content (as Connexions) and meta-aggregators (as Globe and Learning Registry). Also, OpenCourseware and other OER initiatives have contributed to making this ecosystem of resources richer. Very interesting insights can be extracted when studying the usage and social data that are produced within the learning collections, repositories and federations. At the same time, concerns for the quality and sustainability of these collections have been raised, which has lead to research on quality measurement and metrics. The Workshop attempts to bring studies and demonstrations for any kind of analysis done on learning resource collections, from an interdisciplinary perspective. We consider digital collections not as merely IT deployments but as social systems with contributors, owners, evaluators and users forming patterns of interactions on top of portals or through search systems embedded in other learning technology components. This is in coherence of considering these social systems under a Web Science approach (http://webscience.org/).

Categories and Subject Descriptors
H.2.8 [Database Applications] Data mining**; J.1 [Administrative Data Processing]** Education

General Terms
Measurement, Design, Experimentation

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Keywords
Learning repositories, Analytics, Metadata, Social Data

1. WORKSHOP FORMAT
The Workshop aims to be an interactive, engaging experience that will motivate participants to get involved and start fruitful discussions on both research but also practical topics around learning analytics over digital content collections. It will include a short presentation of issues, solutions and cases, with demo in some particular cases and few enlightening presentations. The intention of the workshop will be that of fostering and promoting the creation of some sort of shared space between the participants and beyond regarding the specifics of digital collection analytics, metrics and associated tools.

2. DURATION
Half-day. 9th of April 2013

3. SELECTION PROCESS
The selection of presentations will be done on the basis of the relevance to the workshop topics, following the review process. Contributions will be sought in the following topics:

- Requirements for the collection of analytics in Repositories and Federations
- Frameworks for aggregation and sharing LO analytics
- Metrics for LO focused but not limited to social data, language, size, quality, growth, history and cultural awareness
- Approaches to address big data problems in collecting analytics
- Tools for the browsing and visualization of LO analytics
- Transfer of successful algorithms and systems from other application areas
- Innovative services and systems for learners and curators based on LO analytics

- Models for the representation of LO analytics
- Data mining methods to extract of meaningful information from data collected regarding LOs
- Experiences from actual implementation of LO analytics in collections, repositories and/or federations

All submissions will be evaluated by at least two reviewers from an international Program Committee that will be set up for this purpose. In addition, the call for contributions will also seek expressions of interest for system demos: the idea is to give the floor to teams already working on collection and repository analytics to provide a demo of their running systems through a "Demo Marketplace", during which participants will be able to walk around the room, watching the system demos and discussing with the system developers. This session is expected to run during one of the breaks of the Workshop. The Workshop is expected to end with a small ceremony for giving a best paper award.

4. PROMOTING ACTIVITIES

A separate Workshop Web site was set up, continuously updated with new information and outcomes. The call for contributions was regularly promoted through all major mailing lists that are related to technology enhanced learning, SoLAR, educational collections, and learning repositories' research. The Workshop will be particularly promoted to the CIP PSP Open Discovery Space project (www.opendiscoveryspace.eu), the Learning Registry network (http://www.learningregistry.org), and to the ARIADNE Foundation (www.ariadne-eu.org) and GLOBE (www.globe-info.org) members since they are planning their plenary meetings in collocation to LAK 2013.

5. DISSEMINATING RESULTS

All presentations from Workshop participants will be made available online through the Workshop Web site and/or Slideshare. Papers will be published as CEUR Workshop Proceedings. In addition, authors of accepted papers will be invited to submit an extended version of their papers for post-publication at a Special Issue of some relevant journal.

6. BIOGRAPHIES

Prof. Miguel A. Sicilia obtained a University degree in Computer Science from the Pontifical University of Salamanca in Madrid, Spain (1996), a degree in Information and Library Science from the University of Alcala (2010) and a PhD from Carlos III University in Madrid, Spain (2002). Currently, he works as a full-time professor at the Computer Science Dept. He is head of the Information Engineering Research Unit (www.ieru.org), a high productivity R&D group and mediator, with an emphasis on engineering Information Systems in the organizational context. He has extensive experience in ontology engineering, Semantic Web development, learning technology, social network analysis, machine learning, soft computing and empirical approaches to Software Engineering. He has been the Organizer of the 1st International Workshop of Ontology and Epistemology for Software and Systems Engineering (ONTOSE 2005), and co-organizer in its followups (next one in 2013 collocated with CAiSE); the main main organizer of the Metadata and Semantics Research Conference (MTSR'05, MTSR'07, MTSR'09, MTSR'10, MTSR'11, MTSR'12). He is serving as an Editor in Chief of the International Journal on Metadata Semantics and Ontologies and of Program-Electronic Library and Information Systems. He is also a member of the Editorial Board of Interactive Learning Environments.

Prof. Xavier Ochoa is a Principal Professor at the Faculty of Electrical and Computer Engineering at Escuela Superior Politécnica del Litoral (ESPOL) in Guayaquil, Ecuador. He coordinates the research group on Teaching and Learning Technologies at the Information Technology Center (CTI) at ESPOL. In addition, he is coordinating the Latin American Community on Learning Objects (LACLO) and organizing the LACLO Conference. He is a member of the Executive Committee of the Society for Learning Analytics Research (SOLAR). He is involved in the coordination of the Ariadne Foundation. Also directing the Center for Development and Support of ARIADNE at Guayaquil. He represents LACLO at the Global Learning Objects Brokered Exchange (GLOBE) consortium. His main research interests revolve around Learning Analytics (measuring learning to help teachers and students), Infometrics (measuring the production and consumption of information in different areas), and Learning Technologies (using technologies to improve the learning process).

Dr. Giannis Stoitsis received the Diploma of Electrical and Computer Engineering from the Aristotle University of Thessaloniki in 2002, and the M.Sc. and Ph.D. degree in Biomedical Engineering from the University of Patras in 2004 and 2007, respectively. He has been previously affiliated with the Biomedical Simulations and Imaging (BIOSIM) Laboratory of the National Technical University of Athens (NTUA), Greece. His research interests include biomedical image processing, medical informatics, computer-aided diagnosis, and web engineering. He is one of the founders and the Technology Director of Agro-Know Technologies (http://www.agroknow.gr) and responsible for the coordination of research & development activities related to technologies for learning repositories and bioinformatics applications.

Dr. Joris Klerkx is a post-doctoral research expert at the Computer Science department of the Katholieke Universiteit Leuven. His research interests include user experience design (i.e. information-visualisation, HCI, multi-touch, mobile devices), learning analytics, quantified self and data visualisation. and flexible access to a global learning infrastructure based on open standards in general. Joris has previously coordinated the research on educational content discovery in the MACE, ASPECT and ICOPER eContentplus projects, and is currently involved in the EU FP7 projects STELLAR, ROLE, in the INTERREG IVa project EMuRgency and in the IWT-SBO project PARIS.