

Editorial: A Message from the Editorial Team and an Introduction to the July-September 2015 Issue

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WELCOME to the July-September 2015 issue of the *IEEE Transactions on Learning Technologies (TLT)*. This issue is a place to present some figures such as the Impact Factor, usually released by Thomson Reuters in late June, and paper processing statistics that become available for another year. We are pleased to report that according to the Thomson Reuters 2014 Journal Citation Report, the impact factor of *TLT* increased to 1.283 (in comparison with 1.22 last year). The journal is now featured in several top-10 lists of journals in its field, including the ranking for educational technology maintained by Google Scholar. Also, we have been able to further decrease the submission processing time. For papers submitted to *TLT* during 2014, the average time to first decision was 53 days, an improvement over the average time of 56 days for papers submitted in 2013. These improvements make *TLT* more attractive and competitive year by year. The acceptance rate for papers submitted in 2013 was 15 percent, a slight decrease from 16 percent for papers submitted in 2012. We hope to continue these trends and would like to encourage you to consider *TLT* as a destination for your strong archival-quality papers. Meanwhile, with this issue, we offer readers another set of engaging papers.

To start, the issue features a thorough review by Carrie Demmans Epp and Susan Bull focused on “Uncertainty Representation in Visualizations of Learning Analytics for Learners: Current Approaches and Opportunities”. This review is very timely. The topic of learning analytics is quickly emerging as one of the key components of online learning and research shows further developments in expressive visualization to represent “wisdom” extracted from large volumes of usage data. Yet, in most cases, the visualized data are distilled with some level of uncertainty. Proper representation of this uncertainty is very important, to avoid drawing inappropriate conclusions from observing visualizations of learning analytics. In the review, the authors offer a comprehensive classification of approaches to uncertainty visualizations and use it to present and analyze many interesting examples. We hope that this paper will receive the deserved attention and will provoke more research in this important direction.

Two other papers in this issue are somewhat related to the topic of learning analytics and learning data analysis. The paper “Increasing Students’ Awareness of Their Behavior in Online Learning Environments with Visualizations and Achievement Badges” by Tapio Auvinen, Lasse Hakulinen, and Lauri Malmi leverages a large volume of collected usage data to make students more aware about their progress and problems. In addition to achievement badges, a relatively popular approach to visualize performance and specific achievements, the paper explores an original heatmap-based social visualization that shows students how their performance with algorithm simulation exercises compares to the performance of other students in the same course.

The paper “Creating Usage Context-Based Object Similarities to Boost Recommender Systems in Technology Enhanced Learning” by Katja Niemann and Martin Wolpers focuses on a different approach to leverage large volume of data collected in educational system: data-driven personalization. In this paper, the authors explore the use of data collected in educational Web portals to establish usage-based similarity between learning objects. In turn, the distilled similarity is used by the proposed recommender approach to improve the quality of content recommendation. The approach has been evaluated using data from two web portals.

The paper “Implementation and Evaluation of Digital E-Lecture Annotation in Learning Groups to Foster Active Learning” by Franka Grunewald and Christoph Meinel continues the topic of video lectures that has been the focus of several other papers published in our journal earlier. The use of video lectures in modern MOOCs has made this technology very popular; yet, in the majority of cases, video lectures are rather passive learning resources. In this paper, the authors are trying to achieve two goals at the same time: to provide an infrastructure for active learner participation and to enhance the searchability of video lectures. The key idea is to offer the learners extensive video annotation functionality creating a culture of participation. The authors present the implementation of this idea and its evaluation in several contexts.

Finally, this issue also contains two papers on the topic of remote laboratories for learning. In “A Flexible and Configurable Architecture for Automatic Control Remote Laboratories”, Martin Kalúz, Javier García-Zubía, Miroslav Fikar and Ľuboš Čírka propose a novel architecture for remote labs that connects various pieces of equipment and offers a configurable client-side application to adapt its appearance and functionality to the experiment. The remote lab configuration has been tested with 32 Master’s students who accessed pre-designed experiments. Two students also created new remote lab projects for their colleagues. Surveys of the students showed favorable responses.

In “LaboREM – A Remote Laboratory for Game-Like Training in Electronics” Franck Luthon and Benoît Larroque describes an architecture for remote electronics laboratories in education that incorporates game elements of collaboration and competition, as well as enabling students to build circuits by operating a robotic arm to select and place components. Studies with students over four years showed that when students moved from a classroom setup to remote operation from home there was a sharp drop in students’ reported confidence and motivation, but that was overcome through the development of the gaming and remote manipulation features.

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