

Learning Analytics Trends and Challenges in Engineering Education

SNOLA Special Session

I. FOCUS OF THE SESSION

Learning analytics brings together a series of methodologies and tools that allow teachers and researchers to obtain a lot of information about the learning of our students from the data collected in learning systems. Thanks to the learning analytics, teachers can carry out a monitoring of the actions in the learning environments, in order to detect students who need attention, problems in the development of lesson plans, difficulties with the resources offered, etc.

During the last years, learning analytics has become increasingly present in educational settings, but it is still a recent research field. Techniques, tools and methods are still under development and experimentation in order to apply them in educational environments, also in engineering education. Education in engineering disciplines usually involves practical and collaborative activities, such as team-project development or the use of simulators, that introduce specific conditions and opportunities for the application of learning analytics solutions. Learner actions and progression need to be considered in a broader way, involving the use of tools to support the management and performance of open and collaborative activities. Also, assessment is many times approached in new ways, for example with rubrics of peer-assessment. These are trends that are being explored in the context of learning analytics in engineering education and that can bring many benefits both for learners and teachers.

The goal of this special session is to gather new research about the development and application of learning analytics solutions in the context of engineering education. Researchers and educational technologists are invited to submit original research and work in progress that further contributes to advances in the field. Both qualitative and quantitative work related to the topics are welcomed.

II. SUBMISSIONS

The special session will involve about 4-6 papers, depending on the quality and quantity of the contributions received.

The following topics are proposed but not limited for the special session:

- Learning analytics oriented to assessment of competences.

- Learning analytics and self-regulated learning.
- Adaptive learning in engineering education.
- Longitudinal studies on learning analytics.
- Theoretical advances in learning analytics for engineering education.
- Ethical and privacy aspects of learning analytics.
- Policy-making and learning analytics.
- Technological developments and learning analytics for engineering education.
- Learning analytics to support classroom orchestration.

III. PROGRAM COMMITTEE

This special session is promoted by SNOLA, the Spanish Network of Learning Analytics. The program committee is made by the following members of SNOLA, but it will be extended to include additional members and researchers:

- Ainhoa Álvarez, Euskal Herriko Unibersitatea, Spain
- Alejandra Martínez Monés, Universidad de Valladolid, Spain
- Ángel Hernández-García, Universidad Politécnica de Madrid, Spain
- Juan Cruz-Benito, Universidad de Salamanca, Spain
- Manuel Caeiro Rodríguez, Universidade de Vigo, Spain
- Mariluz Guenaga, Universidad de Deusto, Spain
- Miguel Ángel Conde González, Universidad de León, Spain
- Mikel Larrañaga, Euskal Herriko Unibersitatea, Spain
- Pedro J. Muñoz Merino, Universidad Carlos III de Madrid, Spain
- Rafael Pastor, Universidad Nacional de Educación a Distancia, Spain
- Salvador Ros, Universidad Nacional de Educación a Distancia, Spain