



# Research Cluster Workshop

## User Adaptive Systems

March 11, 2022

1:30 – 3:30pm MST

[Click here to join the meeting](#)

Introduction (1:30 – 1:40pm)

Keynote talk (1:40 – 2:30pm)

**Learning analytics in social learning environments**

Prof. Elvira Popescu, University of Craiova, Romania

Student talk (2:30 – 3:00pm)

**Behavior-Based Identification of Learners' Cognitive Characteristics Using Machine Learning**

Dr. Jason Bernard (former MSc IS student at Athabasca University)

Discussion Session – Professors' announcements and idea sharing (3:00 – 3:10pm)

**Announcements of funded MSc IS thesis, project and essay topics**

Prof. Sabine Graf, Athabasca University

Discussion Session – Students' corner (3:10 – 3:30pm)

**What is the difference between a MSc thesis, project and essay?**

Prof. Sabine Graf, Athabasca University

**We look forward to your attendance!**

**If you would like to join this cluster, please send an email to Prof. Sabine Graf at [sabineg@athabascau.ca](mailto:sabineg@athabascau.ca)**

# Keynote Talk

## Learning analytics in social learning environments

**Presenter: Prof. Elvira Popescu, University of Craiova, Romania**

### **Abstract**

Learning analytics (LA) is a growing research area, which aims at selecting, analyzing and reporting student data (in their interaction with the online learning environment), finding patterns in student behavior, displaying relevant information in suggestive formats; the end goal is the prediction of student performance, the optimization of the educational platform and the implementation of personalized interventions. The topic is highly interdisciplinary, including machine learning techniques, educational data mining, statistical analysis, social network analysis, natural language processing, but also knowledge from learning sciences, pedagogy and sociology.

Despite its increasing popularity, LA has been applied less in the context of social media-based environments; hence in this talk we focus especially on research in social learning analytics area. In particular, we explore academic performance predictors and the relationships between students' learning styles and their social media use; we also investigate students' collaboration patterns and the community of inquiry supported by social media tools. Four research directions are tackled: analytics dashboards, predictive analytics, social network analytics and discourse analytics. As far as analysis techniques are concerned, we apply various approaches, such as: classification, regression, clustering and PCA algorithms, textual complexity analysis, social network analysis techniques, content analysis based on Community of Inquiry. We thus address the "trinity" of methodological approaches: i) network analysis (representing actor-actor / social relations); ii) process-oriented analysis (based on action logs and pattern detection); iii) content-oriented analysis (based on learner created artefacts); hence a more comprehensive learning analytics perspective is provided.

### **Short Bio**

Elvira Popescu is a Full Professor at the Computers and Information Technology Department, University of Craiova, Romania. Her research interests include technology-enhanced learning, adaptive educational systems, learner modeling, computer-supported collaborative learning, learning analytics, and intelligent and distributed computing. She authored and co-authored over 100 publications, including two books, journal articles, book chapters, and conference papers. In addition, she co-edited six journal special issues, as well as 20 international conference proceedings. She participated in over 15 national and international research projects, three of which as a principal investigator. Prof. Popescu also serves as the Vice Chair for the IEEE Women in Engineering Romania Section Affinity Group and is a board member for the IEEE Technical Committee on Learning Technology and the International Association of Smart Learning Environments. She is also a Distinguished Speaker in IEEE Computer Society Distinguished Visitors Program (2020-2023). She received several scholarships and awards, including five best paper distinctions. She is actively involved in the research community by serving as associate editor for three journals (IEEE Transactions on Learning Technologies, Smart Learning Environments, Frontiers in Computer Science), member of five other journal editorial boards, organizing a series of international workshops (SPeL 2008–2020), serving as a conference chair, program committee chair and track chair for over 20 conferences.