

# Learning Analytics from Virtual Reality (LAVR)

4th March 2025, 13:30-17:00 IST, Dublin, as part of LAK25 conference

This workshop was organised as part of the pre-conference program for the 14th International Conference on Learning Analytics and Knowledge (LAK'25). The event was designed as a symposium scheduled for half-day duration in the afternoon on 4th March 2025.

The goal of the LAVR workshop was to establish first conversations and bring together researchers and practitioners working on topics on the intersection of Learning Analytics (LA) and (immersive) Virtual Reality (VR) in educational settings. Overall, it aims to advance research on the potential and challenges of rich sensory data generated from VR for learning purposes. Ultimately, we strive to better understand how LA can improve the future design of educational VR applications. Therefore, we call for contributions on the role of LA in foundational research about the VR infrastructure and its multimodal analytics; VR for asynchronous learning experiences; and VR for synchronous teaching in the metaverse.

There were 15 papers submitted for peer-review to this workshop, 4 of them were desk rejected. The remaining 11 were reviewed by at least two members from the Program Committee. From these 11 papers, five of them were submitted with the intention to be included in CEUR and the remaining six only as posters for presentation. Out of these five CEUR papers aiming for CEUR publication, five were accepted for this volume, two as regular papers and three as short papers. These five papers are the content of this workshop proceedings.

1. "Scaling Virtual Classrooms: Overcoming Barriers to Learning Analytics in VR" by Aytaj Ismayilzada, Ayaz Karimov, and Mirka Saarela [regular]
2. "Two Layers of Learning Analytics: Authoring Immersive Experiences" by Matthias Ehlenz and Birte Heinemann [short]
3. "Training Classroom Management Skills with VR: A Learning Analytics Approach" by Birte Heinemann, Jasmin Hartanto and Ulrik Schroeder [regular]
4. "Crafting Personalized Learning Experiences in 3D Environments with Pedagogical Conversational Agents" by Amir Winer, Neta Bodner and Nitza Geri [short]
5. "A systematic review of learning analytics in virtual learning environments: Trends, challenges, and future directions" by Lei Tao, Mutlu Cukurova and Yanjie Song [short]

Together with the presentation and discussions of the four papers, the event was started by an introduction. The last hour of the workshop was dedicated to the presentation of the work in progress of projects and showcasing of the demos. The participants could circle around across different contributions and try out the VR experience themselves and discuss with the authors. The workshop concluded with a plenary discussion about the feedback of the workshop, potential impact of GenAI on the VR analytics and plans for increasing the community of researchers working on the intersection of analytics and VR in next years.

We would like to thank all the authors who submitted their work for this event, as well as our program committee for providing the detailed feedback for all the papers.

## Organising committee

- Martin Hlosta, IFeL, Swiss Distance University of Applied Science, Switzerland
- Ivan Moser, IFeL, Swiss Distance University of Applied Science, Switzerland
- Amir Winer, Open University of Israel
- Nitza Geri, Open University of Israel
- Birte Heinemann, RWTH Aachen, Germany
- Sergej Görzen, RWTH Aachen, Germany
- Mafor Penn, University of Johannesburg, South Africa
- Umesh Ramnarain, University of Johannesburg, South Africa
- Christo van der Westhuizen, University of Johannesburg, South Africa

## Programme Committee

- Geoffray Bonnin, Université Lorraine, France
- Jean-Michel Boucheix, Université de Bourgogne, LEAD-CNRS, France
- Herman Myburgh, University of Johannesburg
- Tanya Nazaretsky, EPFL, Swiss Federal Institute of Technology Lausanne, Switzerland
- Ofir Turel, University of Melbourne, Australia
- Sina Shahmoradi, PH Bern, Switzerland
- Mamta Shah, Elsevier, USA
- Egon Werlen, IFeL, Swiss Distance University of Applied Science, Switzerland
- Qi Zhou, University College London, UK