Synergies in Education – Empowering Minds Through Learning Analytics and AI

University of South Australia
City West Campus
North Terrace, Adelaide SA
1st – 2nd November 2023

The 2023 Australian Learning Analytics Summer Institute (ALASI) is designed to be an immersive experience that brings together educators, researchers, and practitioners for an engaging exploration of cutting-edge techniques and ideas at the intersection of education, analytics, and AI.

The landscape of education is undergoing a remarkable transformation. Theory-driven and data-informed insights and AI-enhanced tools are poised to revolutionise the way we understand, facilitate, and optimise the learning process. The intersection of Learning Analytics and AI offers an unprecedented opportunity to create dynamic, personalised learning experiences that cater to the unique needs of each learner.

At ALASI 2023, we seek to explore the multifaceted potential of these technologies and their impact on the educational ecosystem. We invite educators (Higher Education, Vocational education, K-12, etc.), researchers, and practitioners to contribute their expertise and insights to this transformative discourse.

Program

<table>
<tr><th colspan="3">Day 1: Wednesday 1st November 2023</th></tr>
<tr><td>9 am</td><td colspan="2">Registration + Morning Tea
Barbara Hanrahan Building (BH2-09)</td></tr>
<tr><td>10 am</td><td colspan="2">Opening of ALASI23
BH2-09</td></tr>
<tr><td>10:30 am</td><td colspan="2">Futures Thinking Panel: Shaping the future of learning: from insights to action
BH2-09
Chair: Maria Vieira (UniSA)
Panel: Brad Snell (Wilderness School), Malgorzata Korolkiewicz (UniSA), & Edward Palmer (Adelaide).
As educational landscapes evolve at an accelerating pace, understanding the synergies and challenges of integrating AI into these spaces becomes paramount. Featuring futurists from several fields of education, this opening panel serves as a multidimensional lens through which to view the future of education and learning analytics. Together, we will dive into the prospective impacts of AI in education, and discuss proactive steps educators can take today to share the future of education tomorrow.</td></tr>
<tr><td>12 pm</td><td colspan="2">Lunch - Barbara Hanrahan Building (BH2-09)</td></tr>
<tr><td rowspan="2">1 pm</td><td colspan="2">Interactive Workshops</td></tr>
<tr><td>What role can AI play in personalised feedback at scale?
Marion Blumenstein (Auckland) & Lisa-Angelique Lim (UTS)
Room: BH3-11

With the recent release of generative AI tools such as ChatGPT, many educators have reacted by releasing statements to students that either completely prohibited the use of AI for course work or cautioned its use. Over time, the debate has shifted focus, with</td><td>How do you build a conversational AI simulation for learners?
Matthew Bennett, Lynnae Venaruzzo, & Sam Dessen (UWS)
Room: BH3-12

Come and meet our AI-powered Metahuman, discover how we created it and learn to write your own prompts to create a conversational AI. In this session, you'll get a chance to interact with our Metahuman, who has quite the personality. We have combined AI</td></tr>
</table>

	HE institutions starting to embrace and explore its potential for learning, assessment and feedback provision. While the pedagogical challenges around AI are much discussed, there is little debate about AI for actionable insight on the student learning journey and potential to personalise their experience. In this interactive session, we will give a brief overview of current LA research on personalised feedback and nudging for success, followed by a discussion and brainstorming session: first, to surface some AI applications in HE or other domains transferable to education, and second, to explore how AI can support the student learning journey beyond points in time, capturing meaningful data and facilitating personalised feedback on personal goals and competency development.	with game-engine technologies to simulate real-life conversational situations, enabling learners to apply and practice professional skills in authentic workplace settings. Our AI-powered Metahuman responds with emotions and a dynamic personality, creating an immersive simulative experience for learners to enhance engagement and learning. You can choose to jump in the deep end and experience our practice mode, or go with the easy mode and receive adaptive feedback from an AI-powered Educator. As learners interact with the AI-powered Metahuman and Educator, real-time transcripts are generated. We're working on new ideas to generate useful insights for this new style of learner interaction. Bring your ideas, and we'll share our initial thinking in the workshop.
2:30 pm	**Afternoon Tea –** Barbara Hanrahan Building (BH2-09)	
3 pm	**Interactive Workshops**	
	Mapping the connection between Learning Analytics and Learning Design *Linda Corrin (Deakin), Nancy Law (Hong Kong), Daisy Chen (McMaster), & Aneesha Bakharia (UQ)* Room: BH3-11 Many frameworks have been developed over the past decade that explore the link between Learning Analytics (LA) and Learning Design (LD). Each framework applies a certain theoretical, pedagogical, and/or practical lens to this connection situated in a particular context or designed to address a particular educational need. However, when developing an LA tool or designing LA research it is often hard to know which framework to choose – or how to adapt frameworks to different contexts. It was this dilemma that motivated the workshop team to develop the LDLA Map which consolidates the key elements of 29 existing frameworks that connect LD and LA. In this interactive workshop, participants will work with the LDLA Map to explore its utility in developing new LA tools, evaluating existing applications of LA, or supporting professional learning in LA and LD. The workshop is designed to give participants a chance to work collaboratively to explore which elements of the map are best applied to their own authentic projects and contexts, and to reflect on how these can be operationalised into the future.	**Towards a University API (that might even work for other learning institutions)** Kirsty Kitto & Andrey Inkin (UTS) Room: BH3-12 Have you ever struggled to get data out of your institution? Grappling with different data formats, syntaxes and poorly implemented specifications and standards? The scaling up of LA solutions in our institutions has been consistently held back by the poor educational data emitted by the various different learning environments in which our students learn. We can rarely easily get the data, and when we can, it is rarely interoperable, or even useful. This interactive workshop will think about how we might move as a community towards defining the educational data that we need, so that we can present a unified set of specifications to our IT teams and EdTech vendors i.e. A University API. Working towards a common data specification would help to ensure that we get the data we need and can even reuse solutions built by other universities. Come along and help define the data future that you would like to see! NB: While we are calling it a University API we are fairly sure that other institutions could also benefit from this approach, so come along if you are interested and help us to ensure that your sector is represented!
4:30 pm	**Day 1 Wrap Up** A quick reflection on the learnings from Day 1 of ALASI23. Barbara Hanrahan Building (BH2-09)	
5 pm	**Poster reception** Join us for canapes while browsing and discussing a great showcase of current research in LA & AI. The reception will begin with a firehose presentation session where each poster presenter will have 30 seconds to pitch their research to the audience. Always fun to see! Jeffrey Smart Building (JS1-13)	

Day 2: Thursday 2nd November 2023

<table>
<tr><td>9 am</td><td colspan="3">Registration
Barbara Hanrahan Building (BH2-09)</td></tr>
<tr><td>9:30 am</td><td colspan="3">Panel Discussion
Topic: How does Generative AI change our approach to research and development in learning analytics?
BH2-09
Chair: Kirsty Kitto (UTS)
Panel: Aneesha Bakharia (UQ), Sadia Nawaz (Monash), & John Kennedy.</td></tr>
<tr><td>10:30 am</td><td colspan="3">Morning Tea - Barbara Hanrahan Building (BH2-09)</td></tr>
<tr><td rowspan="2">11 am</td><td colspan="3">Interactive Workshops</td></tr>
<tr><td colspan="2">Learning Analytics Integrate-a-thon
Josh Burridge, Shannon Rios, & Eduardo Oliveira (UniMelb)
Room: BH4-22

Learning analytics adoption remains a challenge that sees fantastic tools with amazing applications left out of many educators' toolbelts. Join us in tackling this problem through designing integrations of learning analytics tools with real teaching contexts. Whether you are a learning analytics researcher or developer, or an educator interested in the possibilities, or a blend of both, this session is intended to bring these sides of the puzzle together. Work in teams to link up a learning analytics tool and a teaching context to design an integration that will be both pedagogically beneficial and technically feasible. Use our suggested LA tool (https://www.intellijourney.education/) and some teaching contexts we provide, or better - bring your own tools and/or contexts along to design an integration with others. This session will not involve coding during (though it might motivate coding new designs later!), and no experience with anything specific is required. Teams are intended to be mixed between technical and pedagogic experience.</td><td>Belonging Analytics – Learning Analytics to Support Student Belonging at Scale
Lisa-Angelique Lim & Simon Buckingham Shum (UTS)
Room: BH4-23

How can we harness the potential of learning analytics to capture - and support - students’ ongoing sense of belonging at university? Research has well-documented the importance of students’ sense of belonging in fostering their engagement. Research in belonging has tended to draw on students’ self-reports. While there are validated instruments such as the Psychological Sense of School Membership, PSSM (Goodenow, 1993) to measure students’ belonging, the challenge lies in getting students to respond to these surveys, in order to collect data on, and provide support to, students with respect to their belonging. Learning analytics may be able to provide a solution, by harnessing students’ digital traces and then providing technology-mediated, personalised support to students. However, to date there is little research in learning analytics for belonging. In this session, we introduce the idea of “belonging analytics” (Lim et al., 2023), and facilitate an exploration into the challenge of capturing students’ ongoing sense of belonging through learning analytics, as well as personalizing support to students with respect to their belonging.</td></tr>
<tr><td>12:30 pm</td><td colspan="3">Lunch - Barbara Hanrahan Building (BH2-09)</td></tr>
<tr><td rowspan="2">1:30 pm</td><td colspan="2">Interactive Workshops</td><td rowspan="2">HDR Workshop
1pm – 5pm
Facilitated by Negin Mirriahi & Chris Deneen (UniSA)
Hawke Building (North Terrace)
Level 5 – Bradley Forum</td></tr>
<tr><td>How Does Learning Science Inform Learning Analytics
Srecko Joksimovic (UniSA), Marion Blumenstein (Auckland), Linda Corrin (Deakin), & Hazel Jones (Griffith)
Room: BH4-22</td><td>Task Difficulty: A Multidimensional Exploration for Personalised Learning
Sadia Nawaz (Monash), Kate Lafferty (La Trobe), Sandra Milligan (UniMelb), & Dragan Gasevic (Monash)
Room: BH4-23</td></tr>
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	Understanding how students learn is fundamental to being able to interpret and translate learning analytics into feedback and/or interventions to support learning outcomes and environments. The field of learning science is full of research that helps us to understand more about the different ways that students learn while providing examples of how data can be used to inform teachers on student learning processes and progress. The ASCILITE Learning Analytics Special Interest Group has been running a series of events throughout 2023 to promote conversations in the community around opportunities for connections between learning science and learning analytics. Inspired by the six questions proposed by the *Deans for Impact* around learning science, this workshop will focus on the outcomes to the questions considered so far in the series, especially their relationship to how we use learning analytics in our day-to-day practice. Come along and learn what the group has discovered so far this year, as well as contribute to the conversation going forward.	Task difficulty is defined as the extent to which an instructional activity requires students to exert effort (e.g., cognitive or physical effort) to develop their knowledge and skills. These activities generally involve personally meaningful or challenging situations, such as those where students need to engage in deliberate problem-solving processes or those where students need to resolve their prior misconceptions. Task difficulties play an important role in students' learning processes, such as influencing their engagement, effort, motivation to learn and strategies. Yet, task difficulty remains underexplored in various educational contexts. In this workshop, you will be introduced to task difficulties as a broader concept by describing examples within a simulation-based learning environment where learning analytics-based behavioural markers were developed using a theory-guided model. Later, task difficulties will be dealt with from the viewpoint of assessments. You will be introduced to the data-related concepts and challenges that can impede or facilitate the instructors and researchers to measure and gauge task difficulties. We anticipate that through this multi-disciplinary perspective, you will have an opportunity to learn, explore and provide feedback on various models and potentially incorporate the various perspectives in your own educational contexts.	The HDR forum will kick off with a panel conversation on the topic of **Well-Being, Resiliency and Career Prospects.** Panellists will include: Tanya Joosten (Wisconsin-Milwaukee), Lisa-Angelique Lim (UTS), and Fernando Marmolejo-Ramos (UniSA). Moderated by Chris Deneen and Negin Mirriahi (UniSA). This will be followed by networking activities facilitated by C3L HDR students.
3 pm	**Closing Session** BH2-09 A collaborative reflection on ALASI23 in the form of a crowdsourced keynote. Definitely worth staying around for…		
3:45 pm	**Conference End**		

The workshop reflection form can be accessed at: https://bit.ly/ALASI23WorkshopReflection