IMCL Special Session Proposal

Title

Situational Awareness and Generative AI for Teaching, Learning and Human Adaptation

Acronym

SENSE-AI

Overview

The rapid emergence of Generative Artificial Intelligence (GenAI) and Large Language Models (LLMs) is transforming educational ecosystems at an unprecedented pace. From lesson planning and assessment automation to adaptive tutoring, immersive learning environments, and AI-supported research practices, educators and learners are increasingly navigating a new landscape of human-AI collaboration. This transformation raises an important question: *Is GenAI fundamentally changing the way teachers teach, and students learn?*

The Special Session **SENSE-AI** explores the evolving role of situational awareness in AI-enhanced education. Situational awareness refers to the ability of educators and learners to perceive, interpret, critically evaluate, and respond to dynamic educational contexts shaped by AI systems, intelligent interfaces, data-driven feedback, and automated content generation. The session aims to examine how GenAI is reshaping pedagogical decision-making, learner agency, classroom interaction, creativity, assessment and feedback, and digital ethics across formal, informal, and professional learning environments.

The session argues that effective AI interventions in education must be sensitive to the situations in which they are introduced. For example, an AI feedback tool may support formative learning in one context but weaken learner agency in another; an adaptive tutor may personalise instruction for some students while reinforcing narrow learning pathways for others; a GenAI lesson-planning assistant may reduce teacher workload but also reshape professional judgement, creativity and curriculum design. SENSE-AI therefore invites contributions that investigate how educators and learners develop awareness of these contextual conditions and how such awareness can guide more meaningful, responsible and pedagogically aligned uses of AI.

The session welcomes interdisciplinary perspectives that critically and creatively investigate the opportunities, tensions, and implications of AI-enhanced learning. Contributions may include empirical studies, conceptual frameworks, technological innovations, case studies, design-based research, demonstrations, and practical applications related to AI-supported education and training.

SENSE-AI also aims to foster dialogue around the future relationship between humans and intelligent systems in education, emphasising responsible, inclusive, and pedagogically meaningful uses of AI. Particular attention will be given to how educators can maintain agency, critical reflection, and creativity while working alongside increasingly capable AI systems.

Topics

- Personalized and Adaptive Learning
- Artificial Intelligence in Education (AIED)
- Generative AI and Large Language Models (LLMs)
- AI-driven Assessment and Feedback
- Human-AI Collaboration in Learning and Research
- Learning Analytics and Educational Data Mining
- Human-Computer Interaction (HCI) and Smart Interfaces
- Smart Classrooms and Virtual Learning Environments
- Online Learning and Digital Education Platforms
- Gamification and Serious Games
- Assistive and Inclusive Learning Technologies
- Ethics and Responsible AI in Education
- AI-supported Creativity and Co-design in Learning
- Immersive and Interactive AI-enhanced Learning Experiences
- AI Literacy and Future Skills Development
- Behavioural and Cognitive Impacts of GenAI on Learning
- Teacher Roles, Pedagogical Agency, and AI-supported Instruction
- Student Engagement and Motivation in AI-mediated Learning Environments

Program Committee

Chair(s)

- *Petros Lameras, Centre for Arts and Creative Cultures, Coventry University, Coventry, UK*
- *Nektarios Moumoutzis, Lab of Distributed Multimedia Information Systems and Applications, School of Electronics and Computer Engineering, Technical University of Crete*

Members

- Prof. Sylvester Arnab, Coventry University, UK - aa8110@coventry.ac.uk
- Dr. Panagiotis Petridis, Aston University, UK - p.petridis@aston.ac.uk
- Dr. Panagiotis Fotaris, University of Brighton, UK - P.Fotaris@brighton.ac.uk
- Prof. Desislava Paneva-Marinova, IMI-BAS - dessi@cc.bas.bg
- Dr Polyxeni Arapi, Technical University of Crete - parapi@tuc.gr
- Assoc. Prof. Detelin Luchev, IMI-BAS - dml@math.bas.bg