

Interact and Engineer - Engineering tomorrow's world through games and simulation

Objectives: Applying game methodologies to engineering, engaging new technologies for engineering applications, cognitive feedback and knowledge encapsulation.

With online gaming rising and an impending digital generation coming into the modern workforce, what better way than to enthuse future practitioners than through interactive gaming and simulation? The engineering track of this conference looks at how game technologies and associated methods will be employed to revolutionise engineering applications, the contention being that gaming environments provide a means to understand what engineers do, how they work including enhancing the way in which they carry out their activities throughout the whole product life cycle. Gaming and simulation technologies have come a long way, especially in the 3D domain; yet modern technological advances in this area have not readily been copied and applied to industrial engineering applications or to promote the learning and understanding of engineering science. This conference scope covers a broad spectrum ranging from integrating/implementing game ware – software, hardware and interactive devices - for problem solving and skills training through to cognitive engineering. This challenging multidisciplinary endeavour seeks to build today's high-performance engineering applications to support new requirements, enable and support natural and intuitive innovation, as well as make work more enjoyable and, consequently, more productive.

MAIN TOPIC AREAS

Submissions are welcomed, but not limited to the following areas: gaming and simulation methodologies for engineering applications, the application and evaluation of virtual environments which engage participants in engineering problem solving, gaming-engineering diversity awareness, behavioural pattern recognition in engineering and gaming, machine learning, cognitive engineering in product design, analysis and manufacturing.

Topics of interest include, but are not limited to:

- Desktop and immersive virtual worlds for design collaboration, vetting and evaluation.
- Analysis, design, and evaluation of complex systems of people and technology.
- Web-enabled solutions for engineering and manufacturing applications.
- Game environments and virtual worlds for educators in engineering and physical sciences.
- Game engines and physics engines.
- Modelling, visualisation and simulation (e.g. environments, processes, assembly, monitoring).
- Human-computer interaction design and modelling.
- Psychological and behavioural user-based evaluations of game-type product engineering interfaces and systems
- Gestures, discourse and dialogue.
- Robotics, machine translation, multimodal fusion.
- 3D devices and gaming technologies for engineering.
- Virtual reality systems, haptics, biometric interactive systems.
- Cognitive science, human factors, data management.
- Knowledge-based systems, artificial intelligent systems, agent-based approaches and technologies
- Systems engineering.

IMPORTANT DATES (Extended deadlines)

400 word Abstract Submission: **04 May 2009**

Authors Notification: **11 May 2009**

4000 word Final Paper Submission: **01 June 2009**

Early Bird Registration: **25 April 2009**

A **SPECIAL ISSUE** for the Engineering Track has been planned. Selected contributors will be invited to submit an extended paper to be published in the American Society of Mechanical Engineers (ASME) Journal of Computing and Information Science in Engineering (JCISE).

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