Associazione Italiana di Aeronautica e Astronautica
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Member of:
International Astronautical Foundation (IAF)
International Council of Aeronautical Sciences (ICAS)
Council of European Aerospace Societies (CEAS)

AIDAA Educational Series and Academy

Virtual, Augmented, and Mixed Reality applications in smart manufacturing

13 January 2025

Overview and General Information:

Virtual Reality applications have immense potential and applications in numerous smart manufacturing and advanced/precision manufacturing applications for design, prototyping, simulation, and training. Extended reality (XR) is a blanket term that is used to refer to multiple technologies such as virtual reality, augmented reality and mixed reality. In this webinar, many VR frameworks that were designed for additive manufacturing and smart manufacturing applications including specialized areas such as pharmaceutical manufacturing will be demonstrated. For optimal user experience, careful consideration to the human sensory stimuli (visual, auditory, haptic, etc.) is inevitable. The various modes range from fully immersive to semi or partially immersive experiences as well as features that involve juxtaposing real world and virtual objects. Considering the wide range of options available, besides selecting the optimal mode (VR/AR/MR) for specific application and audience, it is vital to design and deliver XR experiences in manufacturing for optimal user experience with reduce cognitive load and higher engagement. This webinar will demonstrate the successfully implemented smart and digital manufacturing applications with due consideration to the above UI/HCI factors.

Learning Objectives:

The webinar will discuss in detail various aspects including:

- Specialized digital and smart manufacturing applications
- Distinctions between VR, AR, MR, and desktop VR
- Common tools & techniques for VR/AR application development
- Hardware and software considerations and limitations

Target audience

Doctoral and post-graduate students, aerospace and defence industry professionals, and military officers.

Dates and times:

January 13, 2024 (Monday) Time: Italy Time 15:00 – 18:00 pm (with 10/15 min break in-between)

Speaker

Magesh Chandramouli is a Professor of Computer Graphics Technology at Purdue University, Northwest. He served as the Director of Programs of the Engineering Design Graphics Division of the American Society for Engineering Education. He was a Frederick Andrews Fellow at Purdue University, West Lafayette, where he completed his doctoral studies. He completed his Bachelor of Engineering from College of Engineering, Guindy, Master of Science in the University of Calgary, Canada and Master of Engineering from the National University of Singapore.

Dr. Chandramouli has served as the Principal Investigator, Co-PI, and/or collaborator on Federal grants including NSF (National Science Foundation) grants, SMART (Singapore MIT Applied Research & Technology fund), Brightspace Innovation Grant, and other grant efforts. He has received national and international recognition including the Warner Professional Practice Award from the Intl. Honor Society for Technology, Innovator Award, University Outstanding Scholar Award. He is/was a member of IEEE, American Society of Engineering Education, MENSA, and Epsilon Pi Tau, The International Society of Technology

Registration and Contacts

Course Code: 20250113

This course is part of the 2024 institutional activity for AIDAA members. The **registration** requires the purchase of one of the packages described here LINK, and the completion of the online form available here LINK.

Course platform: Webex, a link will be sent via email as the registration is complete.

At the end of each course, **attendance certificates** will be sent to participants via email.

For further info, please, contact academy@aidaa.it

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