



## **Universally Designed Museum Education: accessibility, technology and more...**

**Dr Katerina Mavrou**

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Museums are not just an exhibition of historical, science, cultural heritage artefacts, but learning environments with tremendous opportunities for the development of deeper interest in topics of personal relevance. This is especially significant for the development of positive learning experiences and learning engagement for learners with disabilities. Thus, the presentation aims to spark discussion on the potential of technology and the guidelines of universal design for learning in promoting accessible museum education for all students. Although a number of technological accessibility solutions provide for the improved physical presence of people with disabilities in museums, making museums an accessible learning experience is a much more challenging task.

*Dr Katerina Mavrou is an Assistant Professor in Inclusive Education and Assistive Technology at the European University Cyprus. Her research interests include (assistive) technology and inclusive education in all aspects of user-centred evaluation, implementation and professionals' collaboration, as well as policy and education for inclusion and ICT-AT, and universal design for learning. Her research record includes European commission reports, referred journal publications, book chapters in edited volumes, an edited book volume and presentations in international conferences. She has been involved in local and international collaborative projects and networks, and represents Cyprus in European and International Associations for the advancement of the rights of children with disabilities in education and the use of (assistive) technology.*



## **Interactive Media and Contemporary Museums**

**Dr Despina Michael-Grigoriou**

*Department Multimedia and Graphic Arts, Cyprus University of Technology*

Traditionally, museums conveyed information to their visitors through the exhibit of real objects. During the last couple of decades, a new trend is adopted by modern museums; to employ technologically advanced systems for that purpose. These systems can be separated in two categories; those accessible from remote visitors, through online multimedia or VR systems and those systems that are located within the physical space of a museum. In the first category we have virtual museums, which extend the physical museums in a variety of ways. Focusing on 3D representations, a virtual museum may be a digital depiction of the existing museum and its exhibits or it might include a combination of objects existing in several museums, while in some cases the 3D objects that have been modeled are based on description of historical documents. This category of systems, aims to convey information and knowledge that can be found at the museums, to virtual visitors, that are not able to visit physically the museum. Systems in the second category, that are located within the museum, aim to attract more visitors at the physical space of the museum. They provide modern ways of learning while increasing the satisfaction of museum's visitors. They allow the virtual interactivity of the user with a 3D representation of objects or the tour within virtual worlds. This category includes applications that run on VR systems, Augmented Reality systems, haptics displays, multi-touch tables, etc. Virtual worlds combine in a great extent entertainment and education/training.

*Dr. Despina Michael-Grigoriou is an Assistant Professor at the Department Multimedia and Graphic Arts, of Cyprus University of Technology and the founder and director of the Microsoft Computer Games and Emerging Technologies Research Lab - GET Lab. She also serves as the coordinator on behalf of the CUT, for the inter-university postgraduate programme MSc in Computer Games and Interactive Technologies. In the past, she has been a post-doctoral researcher at EVENT Lab (2011), Department of Psychology, University of Barcelona that specializes on experiments within Virtual Reality systems. She also held a position of Lecturer (2009-2011) at the private tertiary education. Prior that she was a research associate (2002-2009) at Computer Graphics and Virtual Reality Lab at the Computer Science Department, University of Cyprus from where she received her PhD in Computer Graphics in 2010. She has received several awards*



*and distinctions including Anita Borg Scholarship awarded by Google (2008), her PhD dissertation was nominated for the Best PhD Thesis Award of the Eurographics Association (2011), two best papers awards (VSMM2014 & VS-Games 2014). Her research interests focus on Computer Graphics and Virtual Reality. She participated or/and being the principal investigator in several funded research projects including H2020 projects and published her work in refereed journals and conferences of these areas.*

### **Virtual and Augmented Reality applications for cultural heritage. Evolution and what to expect in the future.**

**Panayiotis Kyriakou**

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3D scanning has enabled us to create accurate 3D models of cultural heritage artifacts, building structures and space. We now have an increasing number of 3D digital replicas that can be accessed and visualized in real time through computer screens, mobile devices, on head mounted displays (HMD) etc, using technologies such as Virtual Reality (VR) and Augmented Reality (AR). A mix of input and output technologies can be used to give new life to museum exhibitions, enhance the museum visitor's experience and transform the museums of the future.

*Panayiotis Kyriakou is a PhD student at the Cyprus Institute in the multi-disciplinary program, Science & Technology in Cultural Heritage. His research interests include interactivity in Virtual and Augmented Reality, Digital Cultural Heritage, virtual museums and serious games. He has participated in various European research projects, such as V-Must, EMAP, GRAVITATE and EAGLE, where he was responsible for 3D documenting cultural heritage artifacts, creating interactive applications such as virtual museums and touch kiosks for interacting with the digital artifacts. His current project is about Natural Interaction in Augmented Reality in a museum space, where he uses off the shelf technology to enable museum visitors to interact with 3D replicas using their bare hands.*



ROUNDTABLE DISCUSSION #2

## **MUSEUMS AND TECHNOLOGY: A COMPLICATED AFFAIR**

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