Extended Reality for Underwater Cultural Heritage: The Case Study of iMareCulture Project

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Abstract

The project iMARECULTURE (Advanced VR, iMmersive Serious Games and Augmented REality as Tools to Raise Awareness and Access to European Underwater CULTURal heritage) is focusing in raising European identity awareness using maritime and underwater cultural interaction and exchange in Mediterranean Sea. The aim of the project is to bring inherently unreachable underwater cultural heritage within digital reach of the wide public using virtual visits and immersive technologies. This talk will present results in respect to extended reality (virtual and augmented reality) interfaces for underwater environments. In terms of virtual reality, two different types of applications will be illustrated. The first one is a dry-visit solution for exploring ancient sites and it is focused on the general public. The second one is a serious game that aims in teaching maritime and archaeologist students the main principles of 'site formation', 'surveying' and 'excavation'. Moreover, a novel augmented reality underwater interface will be presented which can detect square markers in poor visibility conditions as well as serve as virtual guide for divers that visit underwater archaeological sites. Evaluation results will be presented for all applications illustrating the effectiveness of the interfaces.

Short Bio

Dr. Fotis Liarokapis is currently a Senior Researcher B (Associate Professor level) with the Cyprus University of Technology, Limassol, Cyprus and at CYENS - Centre of Excellence, Nicosia, Cyprus. He received the D.Phil. degree from the University of Sussex, U.K., and has worked as a Research Fellow with City University, London, U.K., Coventry University, U.K., and most recently at Masaryk University, Czech Republic, where he was an Associate Professor and Director of the HCI Lab. Dr. Fotis Liarokapis has contributed to more than 140 refereed publications with more than 3800 citations (h-index: 34 and i10-index: 77). He has organised multiple conferences and workshops and he is the co-founder of the International Conference on Virtual Worlds and Games for Serious Applications (VS-Games). Currently, he is the general chair of IMET 2022 and a member of IEEE.