

## Horizon 2020 PROFILE FORM

<b>Organization Name / Department</b>	Saint Martin's Institute of Higher Education, Department of Computing PIC: <b>896512316</b>	<b>Organization Short Name</b> <b>SMI</b>	
<b>Organization Type</b>	<input checked="" type="checkbox"/> University <input type="checkbox"/> Public Research Centre <input type="checkbox"/> Large Scale Enterprise <input type="checkbox"/> Small and Medium Scale Enterprise	<input type="checkbox"/> Public Body <input type="checkbox"/> International NGO <input type="checkbox"/> National NGO	
<b>Research Fields</b>	<b>Digital Cultural Heritage</b> <b>StoryTelling</b> <b>Mixed Reality</b> <b>Games Design &amp; Development</b> <b>Edutainment</b> <b>User Experience</b>	<b><i>Sub-Fields / Keywords:</i></b> <b>Interactive Narratives</b> <b>Transmedia Storytelling</b> <b>Virtual Reality</b> <b>Augmented Reality</b> <b>Immersion</b>	
<b>Short Description of the Organization / Department</b>	Saint Martin's Institute of Higher Education is licensed by the National Commission for Further & Higher Education (NCFHE) of Malta as a higher education institution with awarding powers for MQF level 5 to level 8. The Department of Computing is one of the departments at the Institute that provides Awards at MQF level 5 and MQF level 6 in areas of Computing and Creative Computing, including Games Design & Development, Web Development, Digital Marketing, User Experience, Financial Technology, Augmented & Virtual Reality and Information Systems.		
<b>Previous Related Projects / Research Experience</b>	<p>The Department of Computing has focused on the use of creative computing techniques – gamification, user experience, augmented and virtual reality, background and character development and story-telling including transmedia – to develop experiences of cultural heritage sites.</p> <p>The Institute is in a collaborative agreement with Heritage Malta, the curator of national heritage sites in the Maltese Islands. Through this collaboration, academics and students have researched how mixed reality may offer enhanced user experience to visitors of cultural sites that may have limitations imposed on visitation. Through this agreement, the Institute has developed a VR experience of the Saint Paul's Catacombs in Rabat, Malta (<a href="https://heritagemalta.org/st-pauls-catacombs/">https://heritagemalta.org/st-pauls-catacombs/</a>) and a VR experience of the Hal Saflieni Hypogeum at Paola, Malta an underground UNESCO HERITAGE SITE dating back to 3500 BC (<a href="https://heritagemalta.org/hal-saflieni-hypogeum/">https://heritagemalta.org/hal-saflieni-hypogeum/</a>). This VR experience was created using the Unity game engine and the Oculus Rift VR Gear to provide an immersive experience for these underground sites (see Fig 1 and 2).</p>		



Figure 1: Educational Virtual Reality experience of the Hypogeum



Figure 2: Fully immersive interactive Hypogeum VR experience

A group of academics have carried out research on 360 degree filming, developing a re-enactment of the first skirmish involving a squadron of knights of the Sovereign Order of Saint John accompanied by Maltese Dejma footmen against an advance scouting party of the invading Ottoman invaders dated May 13<sup>th</sup>, 1565, at Mellieha Bay.

(<https://medium.com/@smartinsedu/saint-martins-institute-of-higher-education-malta-robotics-olympiad-2019-e3d56a1a36d5>) (<https://medium.com/@smartinsedu/startmyinspiration-793b95d17b8f>)

The Institute was also a key motivator to digitise and include in the Google Cultural Institute a number of major Heritage Malta sites and digitised artefacts. (<https://artsandculture.google.com/partner/domus-romana>). Saint Martin's Institute also used the Google Trekker to include some main heritage sites as part of Google Street Maps with the intention to highlight how built heritage may be presented to the world.

(<https://medium.com/@smartinsedu/making-built-heritage-accessible-to-the-world-a054d253dff>)

Saint Martin's staff managed the project that spanned 12 weeks in total.

The Department of Computing academics from Saint Martin's Institute of Higher Education have published papers and book chapters in this particular genre and can be found here: <https://medium.com/@smartinsedu/research-innovation-c946d5266293>

<b>Short Description of the Project idea (if foreseeable)</b>	<p>VR.Heritage.Europe is seeking partners from European Research Institutions, Cultural Organisations, National Heritage Agencies and Universities interested in developing Mixed Reality experiences to prove the concept of digitizing built up heritage sites and make them accessible through Virtual Reality technology, with the specific intention to provide for conservation, archiving, education and archeological study of the sites with minimal intervention to the site itself. The project will develop a narrative for these sites through stories related to the history of the site throughout the years of its existence. The initiative will also provide for commercialization that will contribute towards the sustainability of the heritage sites themselves, as well as support further digitalization efforts through edutainment, gamification and offering the digital environment in the production of movies and commercials. Thus the project aims to use digitization beyond preservation by providing interactive experiences within the site's virtual representation.</p>
<b>Related Call/Topic</b>	<p>DT-TRANSFORMATIONS-12-2018-2020 : Curation of digital assets and advanced digitisation</p>
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