

12_EN/2022

20.05.2022

Augmented Reality for Research Museums

Leibniz Research Museums develop prototypes for AR applications

At the A MAZE. Museum Online Hackathon "AR you ready", six teams of international AR experts joined mentors from Leibniz Research Museums to create prototypes for augmented reality (AR) museum applications. The three best prototypes were presented at the A MAZE. Award show in Berlin. All prototypes are now available to be tested online.

Bringing museum objects to life with augmented reality was the goal of the two-day online hackathon with international participants. The resulting prototypes not only bring objects from the Leibniz Research Museums to life, but bring them into new contexts – even outside of their museum buildings. For example, one of the projects featured the story of Melli Beese, a female flight pioneer who has received relatively little attention from the scientific community. We see and hear Beese in an audio story, and AR effects that make her story tangible with almost all of our senses, for example by making the rotation of her airplane propeller perceptible via the vibrations of your smartphone.

These AR applications can be easily tried out on one's own smartphone and in some cases can already be used directly in social media platforms such as Instagram and Snapchat. The AR experiences can thus make information about museum objects and topics accessible in an entertaining and often surprising way. Watch the prototype teaser videos and try them out on the Leibniz Research Museums website: www.leibniz-forschungsmuseen.de/en/hackathon-ar
This short video also provides insights into the creative process during the hackathon: https://youtu.be/SLIjjoW07_M

The A MAZE. award show on May 17th featured three projects that were particularly convincing. The panel of judges from the Leibniz Research Museums was impressed by how quickly the teams developed functional AR prototypes and that all of the projects offered the potential to be extended across the museums to different topics and objects. The first place project, "DISPLACE AR," already demonstrates in its prototype how exciting connections can be made between very different museum collections and exhibition elements, such as airplanes and flying insects. Two other projects were equally convincing in their different approaches and therefore shared second place.

1. "DISPLACE AR - location-based AR-viewer & game", developed by Alan Prohm, Annika Ley, Fehime Seven and Frédéric Urien:

In DISPLACE AR, museum 3D objects are placed in public spaces. The concept focuses on linking the Leibniz Research Museums with their different locations and topics in a publicly visible way. All participating museums were included in the prototype.

2. "Woodlice AR", developed by Vladimir Storm and Louisa Schirmer aka. Impux:

A woodlouse sits on your hand as a Snapchat filter in Woodlice AR, bringing its story closer to young museum visitors in particular. The talking 3D woodlouse was developed primarily with the support of the Senckenberg Museum für Naturkunde Görlitz.

2. "AR-Audio-Walk Melli Beese", developed by Scavengar (Arthur Schiller, Henriette Greßler) & Sara Rutz:

A blog entry of the Deutsches Museum Munich about the aviation pioneer Melli Beese was processed in this AR application as a multisensory 3D installation.

During the A MAZE. Festival, the topic of augmented reality and museums was further explored at an online talk "AR we ready?" on International Museum Day. A panel discussion at this event brought together hackathon participant Vladimir Storm, AR artist Nadine Kolodziey, as well as museum mentors Antje Kluge-Pinsker from the Römisch-Germanisches Zentralmuseum in Mainz and Johannes Sauter from the Deutsches Museum in Munich. The conversation revolved around the potential of AR in reaching younger audiences, as well as connecting analog exhibitions and objects with augmented reality. The conversation is available as a recording on the Leibniz Research Museums website: www.leibniz-forschungsmuseen.de/en/amaze-talk-2022 .

The "AR You Ready" hackathon represents the second collaboration between the Leibniz Research Museums and the A MAZE. Festival and deepened the the Museums' ties to the AR and Playful Media scene. With funding from the *Aktionsplan II* of the Leibniz Research Museums, financed by the federal government and the host states, important steps were thus taken within the past two years for experimental digital approaches, their expansion and further development within the museums.

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Eight Leibniz Research Museums – one *Aktionsplan*

Eight Leibniz Research Museums collect, investigate, and engage. Their collections and archives comprise well over 100 million objects and form the foundation for research into: the history of the earth and its biodiversity, the history of culture and technology, and preservation of scientific and cultural heritage. The Leibniz Research Museums are guided by the understanding that access to knowledge and factual information is the basis for critical thinking and is therefore fundamental to our society. The goal of the *Aktionsplan* is to promote conversation and discussion about the major global challenges of our time. The museums are not only showcases for collections and research institutes, they also accompany society on its ongoing path toward major transformative changes. In the *Aktionsplan Leibniz Research Museums*, they jointly develop innovative strategies, areas for action, and programs. Projects take place at the museums and innovative locations, in analogue and on digital media. **A World in Motion** is the theme of their collaborative projects with a focus on mobility / migration / movement in an interdisciplinary and international context. In addition, the museums in the *Aktionsplan* work on individual and joint projects in cooperation with external partners. The *Aktionsplan* Leibniz Research Museums is funded by the Federal Ministry of Education and Research and the federal states in which the research museums are located, in accordance with a resolution of the Bundestag.

www.leibniz-forschungsmuseen.de/en

The Leibniz Association

The Leibniz Association connects 96 independent research institutions that range in focus from natural, engineering and environmental sciences to economics, spatial and social sciences and the humanities. Leibniz Institutes address issues of social, economic and ecological relevance.

They conduct basic and applied research, including in the interdisciplinary Leibniz Research Alliances, maintain scientific infrastructure, and provide research-based services. The Leibniz Association identifies focus areas for knowledge transfer, particularly with the Leibniz research museums. It advises and informs policymakers, science, industry and the general public.

Leibniz institutions collaborate intensively with universities – including in the form of Leibniz ScienceCampi – as well as with industry and other partners at home and abroad. They are subject to a transparent, independent evaluation procedure. Because of their importance for the country as a whole, the Leibniz Association Institutes are funded jointly by Germany's central and regional governments. The Leibniz Institutes employ around 20,500 people, including 11,500 researchers. The financial volume amounts to 2 billion euros.

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