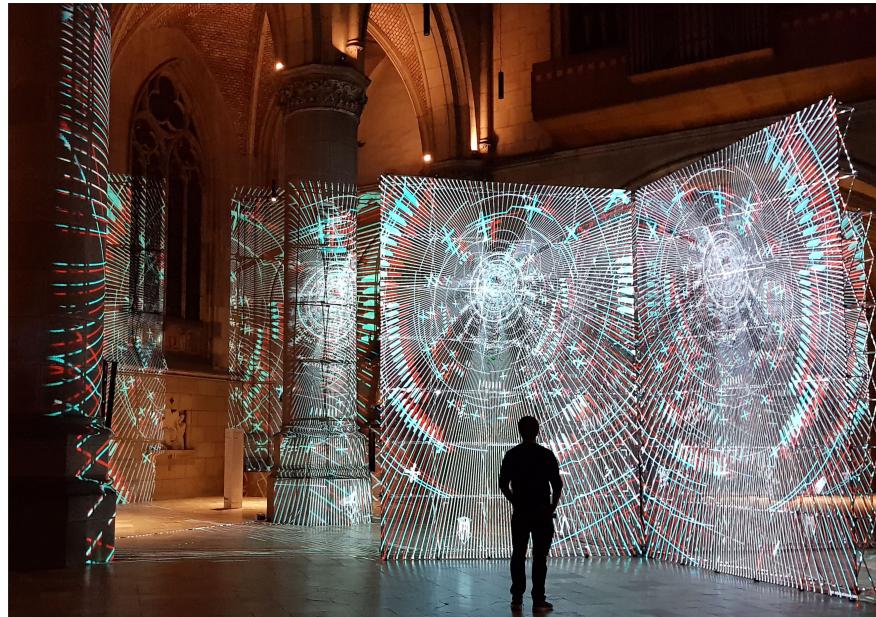


LightTank

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ABSTRACT

LightTank is an interactive Extended Reality (XR) installation that augments a large lightweight aluminium structure with holographic line drawings. It consists of four transparent projection walls which are assembled to an X shape tower like construction of 7.5 x 7.5 x 5.5 m.

The project was developed by the arc/sec Lab in collaboration with the Augmented Human Lab for the Ars Electronica Festival and presented in the Cathedral of Linz in Austria. It aims to expand principles of augmented reality (AR) headsets from a single person viewing experience, towards a communal interactive event. To achieve this goal, LightTank uses an anaglyph stereoscopic projection method, which combined with simple red/cyan cardboard glasses, allows the creation of 3D virtual constructions.

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The holographic line drawings are designed to merge with its physical environment, whether it is the geometrical grids of the aluminium structure or the gothic architecture of the cathedral. Certain drawings seem to peel off the existing physical structure, while others travel through the cathedral and line up with the characteristic elements like columns, groined arches and rose windows.

The project follows a hybrid design strategy which places equal attention to both design aspects, the physical and the digital. The aim of the setup is to explore user responsive architecture, where dynamic properties of the virtual world are an integral part of the physical environment. LightTank creates hereby a multi-viewer environment which enables visitors to navigate through holographic architectural narratives.

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