

RO22-010 - DIVICO

Abstract

VRVis is Austria's leading COMET competence centre for Visual Computing, which has stood for successful knowledge and technology transfer between academic research and industry for over 20 years. The development of human-centred workflows for data communication, analysis, acquisition and generation are a central element of the VRVis research strategy. At the same time, immersive technologies and digital twins are further important research fields linking Visual Computing with novel display and interaction technologies, real-time simulation, artificial intelligence and modelling. As a cross-sectional technology, Visual Computing is used in areas such as Industry 4.0, medicine, culture, communication and entertainment, the construction industry, infrastructure planning and disaster prevention, and has a correspondingly broad influence on the most diverse fields of application.

The desire to experience our environment with all our senses and to interact with it is something deeply human that also continues in the digital realm. Visual Computing addresses this need. VRVis is convinced that visual computing can actively contribute to a humanistic implementation of digitalisation. Digital Humanism provides important complementary topics and perspectives for several related ethical questions, which have so far only been rudimentarily considered in the context of Visual Computing research. This is offering great opportunities for mutual synergies between Digital Humanism and Visual Computing.

The aim of the DIVICO project was to bring Digital Humanism into interaction with the research field of Visual Computing and to identify ways to raise awareness and create impact of Digital Humanism in real world applications together with our industrial partners. In cooperation with Digital Humansim expert Dr. Erich Prem, eutema GmbH, we explored and identified on one hand the possibilities of Visual Computing and related fields to implement principles of Digital Humanism. On the other hand, we made important core topics of Digital Humanism accessible for a large research institute such as VRVis by establishing ethical principles and guidelines to integrate Digital Humanism principles into our research processes. Discussions with experts in the fields of visual computing, artificial intelligence and digital humanism and other stakeholders opened up new perspectives on our research field and we identified several relevant research topics at the interface of the two disciplines. This led to a dedicated scientific roadmap that will be implemented by VRVis in the next 5 years. Parts of the insights gained during DIVICO will be published in form of a white paper in 2024 and will be in this way effective within VRVis, but will also give important impulses to industry and economy, as well as to the scientific community in the field of visual computing. A tailored PR strategy developed during DIVICO will ensure the dissemination of our results to the scientific community and the broader public.

The roadmap serves already now as strategic decision-making tool for the VRVis management and is an important guiding instrument for all staff members in their R&D work. Its content is already mirrored in the current VRVis research agenda. As Digital Humanism is now anchored as a guiding principle of VRVis research, we expect a multiplicative effect that will lead to a broad impact and implementation of the principles of Digital Humanism among our corporate partners in the medium to long term.

Keywords:

Digital Humanism with Visual Computing

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Status: Completed (01.11.2022 – 31.07.2023)

Further links to the persons involved and to the project can be found under
<https://www.wwtf.at/jpeto2.brunner.at/funding/programmes/ei/RO22-010/>