Visually representing and analyzing data is a core pillar of modern Data Science. While many successful desktop visualization tools exist these days, the use of visualization in Post-WIMP interfaces is still a largely open and active research area. In this seminar, we will specifically focus on the usage of virtual and augmented reality (VR/AR) displays for visualization. With the recent technical advances of VR/AR displays, many new opportunities and challenges for visualization design and research have emerged.

There will be two main areas that will be covered. **Immersive Analytics**, on the one hand, depicts the usage of VR displays for data visualization. Specifically for spatial data, such approaches can provide a realistic understanding of physical phenomena. However, immersive-ness might also foster a better understanding of abstract data – to which degree is an open research question. Figure 1 shows an example of immersive analytics. Two heatmaps can be vertically shifted by the VR user, allowing for a new way of interactively comparing such data.

**Situated Visualization**, on the other hand, deals with enriching the real world with representations of digital data through AR displays. The great potential of such approaches is that digital data can be put into its actual context alongside with real objects. Figure 2 shows an example of situated visualization, in which augmented representations are used to guide the direction and depth of a drilling task.

The goal of the seminar will be to discuss and understand recent trends in these two viable areas: Immersive Analytics (IA) and Situated Visualization (SV). Some topics that might be covered include: the role of immersion for Data Analytics, IA/SV for spatial data, IA/SV for non-spatial data, Visual Analytics in IA/SV, accessibility in and for IA/SV, novel interactions for IA/SV, IA/SV for medical applications, IA/SV for construction and engineering, research methods for IA/SV, and empirical studies of IA/SV.

**Language**
English

**Dates**
The seminar will take place in the summer semester 2020 at the VISUS building in room 00.012 on Tuesdays at 2 pm starting on April 7th.
There will be no preparation meeting, topics will be assigned during the first seminar class.

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