research directions– *extended user interfaces*

Is desktop VR a suitable candidate as an interface technology for multimedia information systems? And if so, what needs to be done to apply this technology effectively?

At first sight, our vision of applying VR as an interface to multimedia systems seems to be doomed to fail. As Ben Schneiderman, in a keynote for the Web3D Symposium 2002, observes:

3D GUI

> *Wishful thinking about the widespread adoption of three-dimensional interfaces has not helped spawn winning applications. Success stories with three-dimensional games do not translate into broad acceptance of head-tracking immersive virtual reality. To accelerate adoption of advanced interfaces, designers must understand their appeal and performance benefits as well as honestly identify their deficits. We need to separate out the features that make 3D useful and understand how they help overcome the challenges of dis-orientation during navigation and distraction from occlusion.*
>
> Ben Shneiderman

So, even if advanced (3D) user interfaces might be useful, there are a number of questions to raise. Again, following Ben Schneiderman:

> *Does spatial memory improve with 3D layouts? Is it true that 3D is more natural and easier to learn? Careful empirical studies clarify why modest aspects of 3D, such as shading for buttons and overlapping of windows are helpful, but 3D bar charts and directory structures are not. 3D sometimes pays off for medical imagery, chemical molecules, and architecture, but has yet to prove beneficial for performance measures in shopping or operating systems.*
>
> Ben Shneiderman

In particular, according to Schneiderman, we must beware of *tacky 3D*, gadgets in 3D space that are superfluous and only hindering the user to perform a task. Well-spoken and based on adequate observations! Nevertheless, at this stage, we should (in my opinion) adopt a slightly more liberal attitude and explore in what ways the presentation of (multimedia) information could be augmented by using (desktop) VR. But enough about *augmentation*. Let's discuss technology, and investigate what is required for the effective deployment of VR from the point of view of intelligent agents!