

Combining Visualisation and Interaction to Facilitate Scientific Exploration and Discovery

British HCI - V&I 2006

Recent developments in software and hardware led to the enormous information explosion. As a result, new visualisation technologies have been introduced to help scientists in dealing with large datasets. At the same time, similar developments have pushed human-computer interfaces beyond the common desktop PC configuration, into novel and multiple display systems, virtual and augmented reality, haptic and multi-sensory interfaces, embodied agents, multi-modal interaction and complex adaptive systems. The effective integration of advanced visualisation and interaction technologies has become a very important issue, especially in the field of scientific computing.

The integration of visualisation and interaction technologies provides exciting challenges and opportunities for HCI. Interactive visualisation systems should be easy to use and not require sophisticated computer skills from users, as many are rather domain-specific experts than computer scientists. To permit users' intuitive as well as collaborative exploration, interaction and visualisation capabilities need to be optimised so that access to the data and associated features will become apparent. Also, it is becoming crucial to develop new design guidelines and metrics for the usability evaluation of interactive visualisation systems and environments. In fact, new visualisation techniques are rarely compared with previous results and their effectiveness is seldom quantified by user studies. Another concern is how to choose between modern display configurations and input devices in order to ensure good user experience while exploring complex data spaces and interacting with other people.

The [HCI 2006](#) workshop **British HCI - V&I 2006** (Combining Visualisation and Interaction to Facilitate Scientific Exploration and Discovery) will take place in London, UK on September 11, 2006. This workshop is aimed to promote the importance of HCI and usability aspects in the visualisation and exploration of complex data and sharing obtained knowledge with other people. It will serve as an international forum for the information exchange on theoretical, generic and applied aspects of HCI within the broad scope of scientific and interactive visualisation.

We encourage researchers and practitioners from a wide range of disciplines to participate in the discussion of the main workshop topics:

- *How can interactive visualisation methods and tools be augmented to address concerns of both scientific computing and HCI?*
- *What are the criteria for choosing between advanced projection equipment and input devices?*
- *How can visualisation and multi-modal interaction techniques be integrated to ensure a good user experience?*
- *Which research questions need to be considered when aiming to achieve efficient HCI and 'human-to-human' interaction between scientists while exploring complex data spaces?*

- *In what way can users expectations and the environment of use be modelled when designing interactive visualisation systems?*
- *How can we define effective abstractions for the visualisation and user interaction processes?*
- *What is the impact of the task or application field on interactive visualisation?*
- *To what extent are usability problems independent of the context of use and need to be taken into account when designing interactive visualisation environments?*

Please submit a short position paper or an extended research abstract of **maximum 4 pages** to "elenaz(at)science.uva.nl" and "tony.adriaansen(at)csiro.au" by **June 6, 2006**. In particular, we are seeking for contributions that deal with but are not limited to:

- Advanced visualisation algorithms and systems;
- Novel display systems;
- Augmented and virtual reality for exploring complex data spaces;
- Collaborative visualisation in VR;
- Multi-modal visualisation and interaction;
- Haptic collaborative environments;
- Adaptive interaction for effective data exploration and knowledge discovery;
- Human factors in computer-supported exploration;
- Social user interfaces;
- Design guidelines for interactive visualisation tools;
- Interactive visualisation applications and systems.

All accepted papers will be published in the dedicated workshop proceedings. Also, following on from the example of previous related workshops, a selected number of accepted contributions will be expanded and revised for possible inclusion into a journal special issue, probably in the Springer [KAIS](#) International Journal.