Interactive Visual Analysis of Scientific Data

Welcoming

Steffen Oeltze, Helmut Doleisch, Helwig Hauser, Gunther Weber



Tutorial Speakers

Two Germans and two Austrians spread over four countries, reunited by research on interactive visual analysis (IVA)

Helwig Hauser

- 1994-2000 assistant professor at the TU Vienna, Austria
- 2000-2003 key researcher at the VRVis Research Center
- 2003-2007 scientific director of VRVis Research Center
- Since 2007, professor in visualization at University of Bergen
- Is promoting IVA for about twelve years

Helmut Doleisch

- 2004 PhD from the TU Vienna, Austria
- 2004-2008 key researcher at the VRVis Research Center, heading the “Visual Interactive Analysis” group
- 2008-2012 founded spin-off company SimVis GmbH
- Since September, leader of CD-adapco’s Vienna office

Gunther Weber

- 2003 PhD from University of Kaiserslautern, Germany
- 2003-2006 PostDoc at the Institute for Data Analysis and Visualization at UC Davis, CA, USA
- Since 2007, research scientist at LBNL's Computational Research Division and adjunct assistant professor of computer science at UC Davis

Steffen Oeltze

- 2004 M.Sc. from University of Magdeburg, Germany
- 2010 PhD from University of Magdeburg
- Since 2010, PostDoc in visualization at Univ. of Magdeburg
- Research on visual analysis of medical and biological data
- Speaker at three VisWeek-tutorials (2006/2007/2008)

Tutorial Outline

2:00pm-5:55pm

Introduction, *Oeltze* (5 min)

- Basics of IVA, *Hauser* (35 min)
- IVA of Engineering Data, *Doleisch* (20 min)
- IVA of Biological Data, *Weber* (20 min)
- IVA of Medical Data, *Oeltze* (20 min)

Coffee break

- IVA of Climate Data, *Hauser* (25 min)
- IVA of Very Large Data, *Weber* (20 min)
- IVA Tools, *Weber, Doleisch, Oeltze* (45min)
- Lessons Learned and Challenges, *Oeltze* (10 min)

What You Will Learn

- Theoretical foundation of IVA
- Various application examples from automotive engineering, climate research, biology, and medicine

➔ Theory and practice will help in transferring the subject matter to your own data and application area

- Techniques from statistics and knowledge discovery
- Handling of very large data
- Overview of off-the-shelf IVA solutions

What You Should Already Know

- Basic understanding of visualization techniques in:
  - Physical space, e.g., surface and volume rendering, rendering modalities, glyphs
  - Attribute space, e.g., histograms, scatter plots, parallel coordinates

Tutorial Material

Tutorial slides as well as additional material will be available at:

http://www.vismd.de/doku.php?id=teaching_tutorials:start#ieee_visualization_conference_ieee_visweek

TinyURL: http://tinyurl.com/IVAtutorial