VIS 2015

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Rejuvenated Medical Visualization

Large-scale, whole-body visualization, visualizing physiology, non-standard imaging and simulations, and cohort studies

Welcome

Steffen Oeltze-Jafra, Anders Ynnerman, Stefan Bruckner, Helwig Hauser

Anders Ynnerman

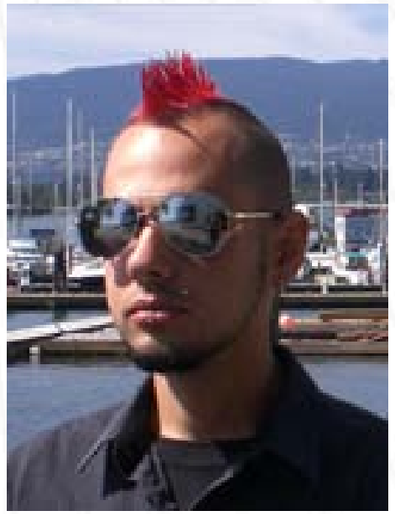
- Since 1999, Professor in Scientific Visualization, University of Linköping (LiU), Norrköping, Sweden
- Since 2010, Head of Division for Media & Information Tech., LiU
- Since 2010, Director of Visualization Center C, Norrköping, Sweden
- Co-founder and board of directors' member of Center for Medical Image Science and Visualization, LiU
- Research on volume rendering and multi-modal interaction

Helwig Hauser

- 1994-2000 Assistant Professor at Technical University (TU), Vienna, Austria
- 2000-2003 Key Researcher at VRVis Research Center, Vienna, Austria
- 2003-2007 Scientific Director of VRVis Research Center, Vienna, Austria
- Since 2007, Professor in Visualization, University of Bergen, Norway
- Research on interactive visual analysis of biomedical data, illustrative vis., combining SciVis and InfoVis

Stefan Bruckner

- 2008 PhD from Vienna University of Technology (VUT), Austria
- 2008-2013 Assistant Professor at Institute of Computer Graphics and Algorithms, VUT
- Since 2013, Professor in Visualization, University of Bergen, Norway
- Research on visual analysis of medical and engineering data, dissemination of findings to the public, and novel approaches for the scientific inquiry of large-scale heterogeneous data spaces



Steffen Oeltze-Jafra

- 2010 PhD from Otto-von-Guericke-University (OVGU) Magdeburg, Germany
- Since 2010, PostDoc in visualization at OVGU
- Currently writing up my habilitation ☺
- Research on integration of visualization, data analysis, and exploration techniques for the investigation of medical, biological, and epidemiological data

Tutorial History

- Held from 2003 to 2008 at IEEE Visualization conference
- Evolved from half-day to full-day tutorial
- Over time, more and more focus on advanced topics

…then, 6-year break…

- Now, its time for rejuvenating medical visualization
- Pressing challenges have broadened
- Fresh trends are emerging

→ New opportunities in MedViz research

What You Will Learn About

- Pressing challenges and new trends in MedViz:
  - From single-organ to whole-body
  - From static to dynamic
  - From anatomy to physiology
  - From single-patient to cohort study
- General ideas on how to address challenges and trends
- First solutions tailored to specific clinical problems
- Open problems triggering future research

Tutorial Outline

Welcome

- Interactive Visualization of Whole-Body Medical Volume Data
  Ynnerman (40 min)
- From Static to Dynamic – Visualizing Real-Time Imaging Data
  Bruckner (40 min)

Coffee break *(20min)*

- From Anatomy to Physiology
  Hauser (35 min)
- From Single-Patient to Cohort Study Data
  Oeltze-Jafra (35min)
- Closing Words and Discussion
  All Presenters (30min)

Tutorial Material

Tutorial material available at: http://tinyurl.com/MedViz